

United States
Circuit Court of Appeals

For the Ninth Circuit.

Transcript of Record. 2
(IN TWO VOLUMES.)

DAVID G. LORRAINE,

Appellant,

vs.

FRANCIS M. TOWNSEND, MILON J. TRUM-
BLE and ALFRED J. GUTZLER, Doing
Business Under the Firm Name of TRUM-
BLE GAS TRAP COMPANY,

Appellees.

VOLUME II.
(Pages 321 to 578, Inclusive.)

Upon Appeal from the United States District Court for
the Southern District of California,
Southern Division.

FILED

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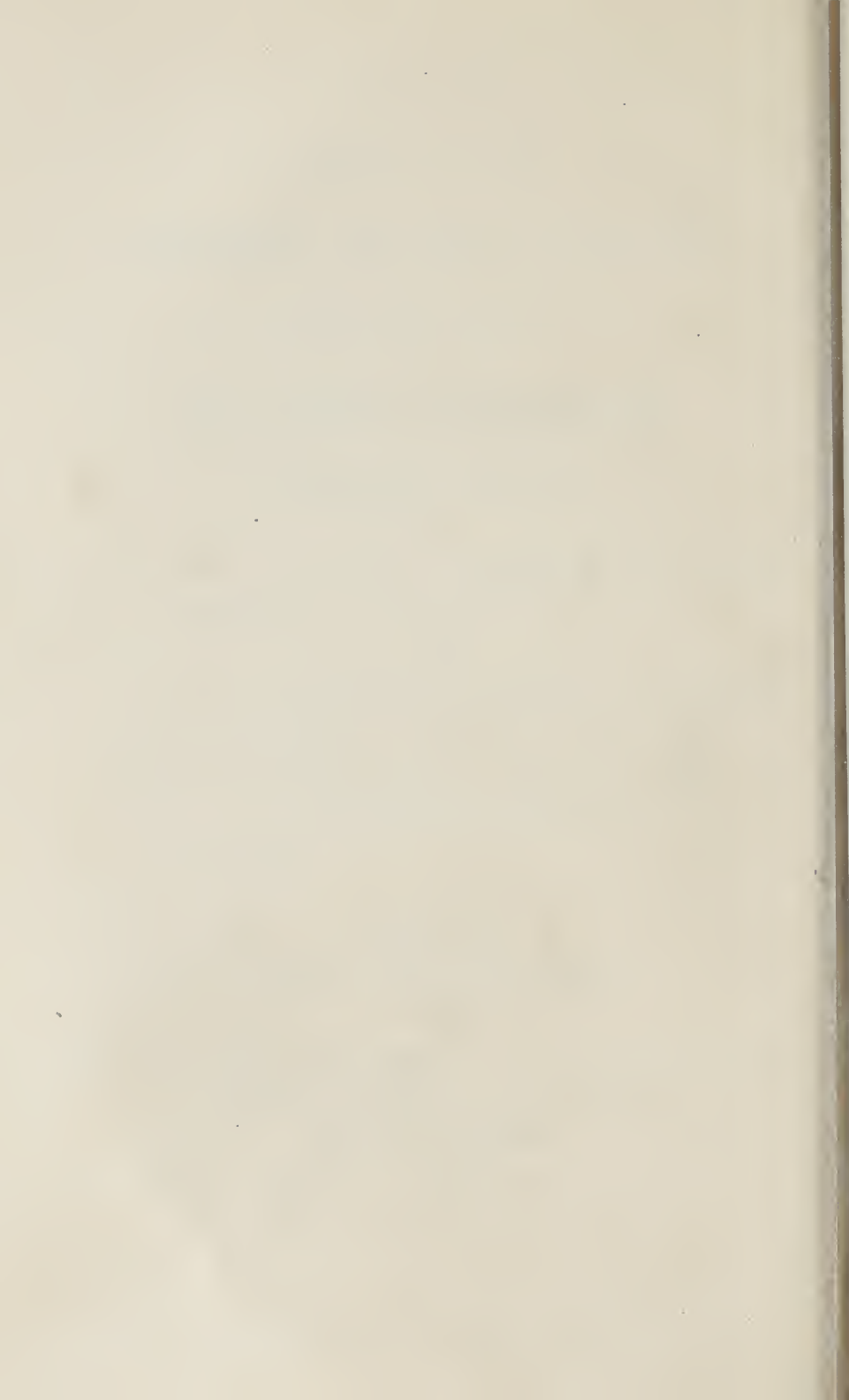
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(Testimony of David G. Lorraine.)

Q. And it still won't work?

A. Still works enough so we have to put a weight which you can see in the picture here, an extra weight, in order to raise the float on account of this here baffle here; we have to add an extra weight which is set up there.

Q. And the device always runs with the oil above the baffle-plate, does it?

A. There is always froth and foam up there; I would not want to say oil.

Q. There is the level of the oil in the Tonner device as it normally runs?

A. Why, I should say right in between these two gage cocks here, under normal conditions.

Q. That is just where the float would maintain it, isn't it? A. Yes, sir. [267]

Q. Just normal, across where the float would have it. A. Yes, on this side here (indicating).

Q. Where is it on this side (indicating)?

A. I got one pipe as I said yesterday, that is right in there, and that goes back 5 inches, and at most times you can get the froth and foam right out of that pipe.

Q. That doesn't necessarily show oil running over this surface and coming down?

A. No, but it would if we put it in at the top.

Q. You haven't got it in at the top?

A. No, sir.

Q. Where is that level in this diameter in the Tonner device, if you know?

A. Well, you could not tell exactly where that

(Testimony of David G. Lorraine.)

level is because there is changes on the wall on this side; this side is where the petition changes.

Q. Now, didn't you on July 18, 1921, file a reissue application of your patents? A. Yes, sir.

Q. And wasn't that for the purpose of correcting any errors in the earlier patent?

A. Well, we could not correct any errors in the drawings; we could not change the drawings.

Q. You did change the drawings, didn't you?

A. No, sir; we put the drawings in the same way.

Q. Now, then, I will ask you the question: Isn't there a port running up in back of that 2 there in the original patent? Isn't there a port indicated running up there and opening between that baffle-plate and that tube in the original drawing?

A. There should not be.

Q. You can see, can't you; there is one there, isn't there? A. Yes, sir.

Q. That has been blacked out in the reissue here, the drawing has been changed.

A. That is just an error; that is all that is. [268]

Q. There was a change in the drawing, then wasn't there?

A. That is just an error; that is no fault of mine that that was changed.

Q. You have described the oil level as just the same on July 18, 1921, as you had when you applied for your reissue?

A. Well, we could not change the wording as long as the drawing showed that was the difference.

Q. Did you say, then, in your reissue "one of the

(Testimony of David G. Lorraine.)

features of the present invention resides in means for very careful adjusting the level of the outlet member 31 as by swinging it about its axis in the member 32"—here, this paragraph (handing document to the witness)? A. Yes, sir.

Q. In which you describe very carefully that this level is maintained across.

A. On this side of the partition; not that side. This side was meant, controlling the float, because the float is not in that chamber (indicating).

Q. Well, now, you took this baffle out in your subsequent devices, didn't you? A. Yes, sir.

Q. But you put the baffle in up until the time this suit was filed, didn't you? A. No, sir.

Q. Had you made any devices prior to that time of the filing of this suit in which the baffle wasn't in any of these here?

A. Like this here? (Indicating.)

Q. How many devices had you made?

A. We had five of these in.

Q. Five of them like this?

A. And we took four of them out, as I told you.

Q. When did you take them out?

A. We took them out immediately after we saw how the [269] thing worked in there.

Q. Wasn't that after this suit was filed?

A. No, sir.

Q. Are you sure of that?

A. Well, now one of them might have stayed in the shop and I would not say as to that.

(Testimony of David G. Lorraine.)

Q. Where were those devices put in? Where were they installed?

A. Well, the General Petroleum, I think, got either three or four, and the Standard Oil Company one.

Q. When were those delivered to them?

A. I could not say, unless I got the record.

Q. You could not say whether they were delivered before or after the suit was filed?

A. I think they were delivered afterwards. I would not say for sure.

Q. They were delivered after the suit was filed?

A. I believe so.

Q. And they had the baffles in after the suit was filed, did they?

A. No, they didn't have that baffle in.

Q. They had a baffle in, didn't they?

A. Had nothing but this in the top (indicating).

Q. When did you take the baffles out of this device for the first time?

A. Well, I came back to the hop right from the well and either told Mr. Burrough at that time I was going to take the baffle out, either take it out or lower it.

Q. Either take it out or lower it? A. Yes, sir.

Q. What were you going to lower it for?

A. So it would not hold the froth so it would run over the top of that sheet, and so I would not have to use that extra weight. [270]

Q. Well, if you lowered it you would get it further down into the oil, wouldn't you?

(Testimony of David G. Lorraine.)

A. I think I would, yes, most assuredly.

Q. Those that you sent out were just like this one on the Tonner lease except they had this bottom floating spreader off?

A. That wasn't in there, no.

Q. Did it have that two-way jet there?

A. Yes, sir.

Q. How did that work? What was the progress of the oil in the trap with that two-way jet with the spreader out of it?

A. Well, it was much better.

Q. Where did the oil go when it came out of the inlet pipe?

A. It is not made just exactly like that spreader there, but it came down this way on each side, a 45-degree angle from that place here. This was brought down there and stopped at only just a short ways.

Q. It had it on there a little ways, though?

A. Well, perhaps five-eighths of an inch, so you could not help it if you put it out there, even the side of the pipe threw very little down there (indicating).

Q. Where would the oil go when it came out of that nozzle? A. Why, it generally went down.

Q. Would it come over and hit against this sand baffle, this interior sheet?

A. Some of the froth might hit it, yes.

Q. Did some of it hit on the outside, I mean on the edge of the chamber? A. This sheet?

(Testimony of David G. Lorraine.)

Q. Some of the oil struck the ring of the chamber?

A. I would not say it would, no, not here; no place in there. The only place it would go would be two sources, come out in two streams. [271]

Q. Would that strike the edge or not?

A. Well, I do not think it hardly could; some of it might have, because I have never seen that thing in action.

Q. From that it would at least boil down into the liquid, down in the bottom part of the trap?

A. Well, there is two large openings here, 7 inches on each side here, for that to flow out of on each side.

Q. You think it would drop down and break into the liquid below and not touch any wall on the way down?

A. It would be impossible to get that oil below that vertical partition without going to this wall.

Q. It did go down the wall?

A. It may have gone down in a solid volume or a thin volume and there would be no way in the world of telling.

Q. How thick was it when it went down the wall?

A. There would be the distance from that sheet to this sheet.

Q. Why didn't you leave that off and just let it plunge right down in there?

A. For the simple reason no man knows anything about baffling oil and gas, either, allowing his incoming gas and oil to stir up his water and sand

(Testimony of David G. Lorraine.)

with his oil, he would never get a separation of his water and his sand, if he kept it stirred up. The object of this invention is to get the oil into the trap and get it into a settled condition.

Q. And the way you do that is to spray it on to one of these other surfaces and let it flow down, is that right?

A. You do not have to let it flow down.

Q. Well, it runs down, then.

A. Yes, runs down.

Q. Now, then, did this work all right?

A. Certainly.

Q. How many of these did you make?

A. We made—Mr. Lacey has the record there, I think about 36. [272]

Q. Why did you then decide to change from that construction and pit in this elbow, this belled elbow? A. The belled elbow?

Q. Yes.

A. Like we did on this recent sale to the General Petroleum, we made several tests and found out it was a very good baffle.

Q. That is this one here?

A. This one right there (indicating).

Mr. F. S. LYON.—Exhibit 1.

Q. (By Mr. L. S. LYON.) You found this belled elbow was a better baffle than that two-way nozzle?

A. I consider it is, yes.

Q. Why? A. Because it is a little cheaper.

Q. Why is it any cheaper?

(Testimony of David G. Lorraine.)

A. Because there is a difference in the price and then here is the casting that goes onto that pipe and more machine work.

Q. Any other reason?

A. No. There is no other reason; it has a larger, —little larger opening there on the end.

Q. Spreads the oil better, doesn't it?

A. Spreads it?

Q. Yes.

A. The object is not to spread it; the object is to get the oil in there without stirring it up.

Q. Well, but it does that by spreading it around better, doesn't it?

A. No, there is no intent there to spread that oil. All the object in that is not to get a nozzle force into it.

Q. But how do you avoid getting the nozzle force by this belled elbow?

A. That is made just the opposite from what a fireman's hose nozzle is made. [273]

Q. So it comes out in a sheet form, doesn't it?

A. No, not sheet. For instance, the hose nozzle you use to shoot water a great distance, you reduce it down so it will be shooting that water a great distance, while, if you wanted to stop that water from going a great distance, you would put it in that bell form, wouldn't you?

Q. Have you actually watched this thing work so you want to testify how it actually works and what the shape of the flow of the liquid is as it

(Testimony of David G. Lorraine.)

comes out of that elbow? A. From a well, yes.

Q. How does it work?

A. Why, it flares right out in one big—

Q. Are you willing to say that the oil coming through there would not, due to its velocity, tend to climb up on this wall and spread out on that wall and come out like that (indicating)?

A. It might if it was dead oil and molasses, but I do not think it would from an oil well.

Q. Are you willing to testify it would not, if there was gas in the oil?

A. I am willing to testify like I have tested it, where I put it onto an oil well, that same nozzle, and you can see the action that comes out in one big spray.

Q. Why do you make the elbow into a bell?

A. It is not made into a bell.

Q. Why didn't you leave it perfectly round? Why did you cut off that edge, flatten it out, the edge adjacent to this sand screen?

A. The others are simply machined off.

Q. They were machined off on the other side, too, weren't they? A. On the other side?

Q. Why is this cut off, a cut edge adjacent to the sand screen if all you were trying to do was machine off the others?

A. You mean that flat place? [274]

Q. Yes.

A. I never left any instructions to put a flat place on it there. They must have cut that off in order to get it in there.

(Testimony of David G. Lorraine.)

Q. Why couldn't you—it is a fact, isn't it, that this incoming pipe projects over quite a little ways from the edge of the trap; isn't that true?

A. Yes, sir.

Q. And then the elbow is stuck on so it comes right approximately at this sand screen; isn't that so? A. That is not necessary.

Q. Well, it is true, isn't it?

A. Well, doesn't that close in?

Q. You could just as well cut this off here and cut this out in the middle, couldn't you?

A. It would be just as good, yes.

Q. But you did not do it?

A. No, it would not weld in there as easy; you could not get at it to weld it.

Q. Why not? You could weld it just as easy if you would move it over six inches, couldn't you?

A. Oh, no, there is no room to weld it.

Q. How much room is there?

A. There is only about 12 inches between this space here, this whole space here is only 12 inches.

Q. You put them approximately adjacent to this baffle here, or this wall here?

A. Well, we are not particular, just so we get it in there, if we can get it equidistant.

Q. For one thing, why do you point this on an angle? A. To keep it from stirring up the oil.

Q. How does that do that?

A. It does not shoot down there.

Q. Where does it go?

(Testimony of David G. Lorraine.)

A. It goes off to one side in place of stirring up the [275] bottom.

Q. Then where does it go as it starts off to one side. A. What, the oil?

Q. Yes.

A. Why, the oil, when it builds up a static head there, the weight of the oil forces the other oil down around the lower part of the partition.

Q. Does it drop into the oil without touching that wall?

A. I should say 90 per cent of the oil does when it comes from your well.

Q. Why don't you turn it down and let it go down and hit?

A. For the simple reason you do not want that velocity and force to stir up your oil.

Q. You testified yesterday didn't you, that what you were trying to do in your trap was to give this gas as much distance that it has to travel as possible? A. Yes, sir.

Q. So that is why, in this construction, you make it go up here, over here, and down there; is that true?

A. Well, it goes back here and just the opposite (indicating).

Q. It goes back up here, and through this pipe down here, and back up. A. Yes, sir.

Q. You want the gas to travel just as far as it can in your trap? A. Yes, sir.

Q. I think you said, didn't you, that you want

(Testimony of David G. Lorraine.)

to get the oil down into the receiver just as quickly as you can.

A. Want to get it into a settled state just as quick as you can; the oil will also travel as far from the oil intake, so it will free itself from water and sand and other materials.

Q. Just explain what you mean by that last part.

A. Well, it is right here explained right here in this [276] drawing (indicating). This oil travels further by being run in at the most remote part of the top from the most remote part of the side here. You see this oil travels all the way around here and while it is settling down here it must travel further to that oil outlet, whereas if you let that oil right in here at the top you would be taking gas, oil and sand right into your oil outlet.

Q. Didn't you say yesterday that you wanted to get the oil into this body of oil just as quickly as you could? A. Settled as quickly.

Q. Just as quickly as you could without moving any further than you had to? A. Yes, sir.

Q. You did not want it to move any further than you had to, do you?

A. Not from the point where it comes in at to where it strikes the oil.

Q. Now then, why can't you take and put this nozzle right in here so that it don't have to move any further and then you have got that much more distance for your gas to go?

A. If that is a true state of affairs, in your trap you would be getting your nozzle force too close

(Testimony of David G. Lorraine.)

to your oil, your heavy oil. I consider that this here, of many models I have made, this is the best arrangement; that is my answer to that.

Q. Don't you want a space here in which the gas can get off? A. Not necessarily.

Q. Where would the gas get off if you sprayed it right in there?

A. If you put your nozzle in there you would be blowing some of your froth and some of your foam up around through this gas channel here.

Q. Why not cut this off and let it come around here (indicating)?

A. That would not work good.

Q. Why not?

A. Because that was tried. That would all froth up, foam up and form a cushion there. [277]

Q. What you are after is to put this stuff in,—put the oil and the gas in at the top of the trap and let it pass down quietly to the oil, submerged oil below the volume of oil below; is that right?

A. The idea of this construction, of that construction there, is this—I told you about six times, is to get the oil into the trap and the gas without stirring up the lower portion of the settled oil sands and water. That is the idea of that construction.

Q. And wouldn't the further it dropped, the more speed it would get in going, the harder it would hit this volume of oil below?

A. This oil is not dropping; this oil is gravitating down here.

(Testimony of David G. Lorraine.)

Q. How about this one (indicating)?

A. That is the gas in the chambers.

Q. I mean this form of device with this elbow on, does the oil drop down into the volume of oil below, or what does it do?

A. It simply goes down of its own weight.

Q. The further it has to drop, the harder it hits, doesn't it? It keeps going faster all the time in there.

A. This oil here forces the oil down around this partition.

Q. Just answer my question. If you projected that oil two feet above this body would it be moving slower when it hit than if you projected it four feet, wouldn't it?

A. Yes, but you do not understand the construction of this. This is applied on the side, built up with oil, and you must have greater weight on your oil on this side, and naturally a higher level of oil to force the oil down around the other side of the partition.

Q. Now, you are willing to state that you have observed one of this kind of traps, 1922, with this belled elbow on it, and that the oil stands higher in it in normal operations on the wall between the sand screen and the wall than it does on the flat side of the [278] sand screen?

A. When it is on an oil well, yes.

Q. Normal operation of the well? A. Yes, sir.

Q. How much higher?

(Testimony of David G. Lorraine.)

A. It depends on several different things. How much foam is in the oil, and gas, how much gas is contained in the oil and regarding the flow of the oil.

Q. Does all of the oil that comes out of an oil well, has it any foam? You have been *taken* about foam on the oil; has all of it foam?

A. Every trap we have had on a flowing well, that is on a flowing well, these flowing wells have foam, yes.

Q. How much foam?

A. Well, that is a pretty hard question.

Q. All oil is not in the form of a foam, is it?

A. If there is any gas in the oil there is foam on the oil.

Q. Do you maintain in your trap with, say a 4-inch inlet as you have put here, that all of your inlet is filled with a froth, or half of it filled with regular body of oil and the other half with a froth?

A. For instance, I think this will answer your question: Out here at the Wilbur well of the Shell Oil Company they had a well that was producing about ten million feet of gas, and 50 barrels of oil was coming out of that gas in 24 hours. Now, that was nothing but like a fog that is all turned out into atmosphere; it looked like a fog, that is all.

Q. Now, how many wells are there that are in that condition; what is the percentage of them? I want just to show that he is taking an extreme. Now, on this particular Shell well you are talking

(Testimony of David G. Lorraine.)

about you put 165 pounds pressure on each one of your traps; isn't there four traps and each one of them operated under 165 pounds pressure on the trap? [279]

A. Well, I couldn't say I ever saw that pressure on those traps.

Q. They are operated under considerable pressure and that you know, don't you *know*?

A. I do not think they are, no.

Q. What do you know about it?

A. I have not been out there to see lately.

Q. Now, I think you said, didn't you, that this baffle plate was 2 inches over the edge of the shell in the Tonner well, in the Tonner trap?

A. Yes, sir.

Q. How far across is this baffle-place in that Tonner trap?

A. Well, as I told you, I did not have the drawings, but I think it is about 11 inches.

Q. Doesn't it go halfway across the trap?

A. This way?

Q. I mean this thing here: How far does that go, clear across the trap? A. $31\frac{1}{2}$ inches.

Q. Then there is an aperture, 2 inch aperture, and it is 31 inches around and 2 inches across, is it?

A. I believe it is.

Q. What is the size of the oil inlet that goes into that trap? A. Three inches.

Q. You maintain that you can bring in, in a 3-inch inlet, enough material to clog an outlet that is 2 inches across and $31\frac{1}{2}$ inches around?

(Testimony of David G. Lorraine.)

A. Yes, sir.

Q. You say that the product of that Shell well, when it escapes at atmospheric pressure, looks like a fog? A. Yes, sir.

Q. What does it look like after it goes through your trap?

A. Well, the Southern Counties Gas Companies declared it [280] was the cleanest separated oil they ever saw.

Q. Have you seen it? A. No, sir.

Q. You have not. Do you know what your gas traps are connected with down at that Shell, those four at the Shell plant, the Shell property?

A. Connected with?

Q. Yes, where does the gas line run to?

A. The southern counties gas line, that is, it did; I would not say now.

Q. What was the pressure on that line?

A. About 125 pounds, I should judge.

Q. Then, it would take over 125 pounds pressure in the trap to force the gas from the trap into the line of the gas company, wouldn't it?

A. I should think it would, yes.

Q. Isn't it true that you have to put a pressure in a gas trap in order to get a dry gas?

A. Yes, sir.

Q. And the gas companies want dry gas, don't they, in their lines?

A. Yes, and they want clean gas.

Q. That means dry gas, doesn't it?

A. Yes, sir.

(Testimony of David G. Lorraine.)

Q. Now, in the device shown in your patent which we have, figure 4 here, where is the expansion chamber?

A. The expansion chamber? I would not say that there is any expansion chamber in that trap.

Q. Don't you have to have an expansion chamber for gas to get out of the oil?

A. You have a clogging chamber. Mr. Trumble is the only man with the specifications that called for an expansion chamber.

Q. You know the one I mean, the one in which the gas passes from the oil.

A. Well, if there is an expansion chamber in this trap it must be the largest in diameter. It could not be the smallest [281] chamber; that must be the expansion chamber right there (indicating).

Q. Don't you have to have a chamber in which the oil comes out and spreads out and the gas takes off from the oil?

A. You would not call the oil chamber the expansion chamber.

Q. I do not care what you call it; I am asking you where, in your trap, figure 4 of your patent, is the chamber in which the gas expands and separates from the oil.

A. Well, we have never pointed this out as an expanding chamber, but that would be an expansion chamber, the one in the trap, because it is larger, and that is where the gas has room to expand. If you are going to expand something you must have space there for it to expand, larger space.

(Testimony of David G. Lorraine.)

Q. You mean, then, the top of the trap above the volume of oil? A. The top of the trap, yes.

Q. That sand screen or baffle that you have in your trap, No. 19, is an open communication at the top, isn't it? A. Yes, sir.

Q. Both sides communicate. A. Yes, sir.

Q. Then, couldn't you properly say that the whole trap was one chamber with a barrier in the middle to divide it?

A. No, any more than we can say that two rooms that have a partition are the same room.

Q. Well, if that partition did not go to the top of the room it would be one open chamber, as far as the air was concerned.

A. As far as the air—I don't know as it would; the wind might blow in one and not the other.

Q. (By the COURT.) Doesn't this operate as an expansion chamber here by reason of the gas going over here and passing up here (indicating)?

A. I would say so, yes, sir.

Q. (By Mr. L. S. LYON.) And to a certain extent the oil would [282] expand as it went up here, the gas would expand as it goes in here.

A. It would have to get to a larger place to expand.

Q. Well, it comes up from here, and gets up here and expands on this side of the baffle, and, of course, some on that side. (Indicating.)

A. You have to keep moving here. There would be your expansion chamber, the large chamber would be the expansion chamber.

(Testimony of David G. Lorraine.)

Q. It could expand partially in a smaller chamber and then expand some more in a larger one, couldn't it?

The COURT.—I think it is very apparent how it is moved.

Q. (By Mr. L. S. LYON.) Now then, how does the oil get into this trap? It comes in at the top, doesn't it? A. Comes in at one side, yes.

Q. At the top?

A. Well, not at the extreme top, no.

Q. Now, if there is pressure maintained in your trap, in those instances where there is pressure, the pressure is uniform throughout the trap, isn't it?

A. Through the whole trap, yes, I should say it would be.

Q. Now, you have a means of withdrawing the oil, haven't you? A. Yes, sir.

Q. And that consists in this port 31, marked in this figure 4? A. Yes, sir.

Q. Now, substantially that same apparatus is employed in your 1922 trap that you sold to the General Petroleum Company?

A. With this here (indicating)?

Q. Yes. A. No, that is not made the same.

Q. What is the difference?

A. The difference is it comes straight down here and hasn't that control on it. [283]

Q. What comes straight down?

A. This here nipple is standing in a vertical position in place of as you see it there.

(Testimony of David G. Lorraine.)

Q. You have a nipple in there which takes the oil out practically the same place.

A. Yes, sir, out here, you see (indicating).

Q. In this 1922 trap where would you say that the gas separates from the oil, what point in the trap?

A. Well, I would say it was separating from the time it left this nozzle until it went out of the top of the trap.

Q. Well, I mean at what point does the gas part from the oil? Of course, it is still going through all the time it gets out, but at what point on the trap does the gas leave the oil?

A. Your oil intake here, the oil comes in here and the oil goes below, some of it. This is still cleaning your oil as the gas travels right up to the very top.

Q. Now, then, during the entire progress of the oil down until it strikes this mass below, there is gas separating from it, isn't there? A. Yes, sir.

Q. There is still some gas in the oil after it gets to the bottom of the chamber?

A. That is where we get most of our gas from after the oil gets into the settled state.

Q. From the time the oil leaves the elbow until the oil is turned out of your separator there is gas coming out of it.

A. If there is nothing but gas or fog coming out of here,—of course there is some oil that leaves the gas right here (indicating) at the nozzle, but if there is heavy oil here there is no gas to speak of

leaving that oil until it gets down into a settled state.

The COURT.—Is that all of this witness?

Mr. S. F. LYON.—One other question for cross-examination.

Mr. L. S. LYON.—We may want to ask him a question after the demonstration, if your Honor please. [284]

The COURT.—When do you want to go out?

(Discussion *in re* demonstration of the trap at the plant of the Trumble Manufacturing Company, West Alhambra.)

The COURT.—Well, we will meet at 2 o'clock.

(Whereupon a recess was taken until 2 o'clock P. M. of the same day, at the plant of the Trumble Manufacturing Company, for a practical demonstration of the gas trap.) [285]

Los Angeles, Cal., Friday, March 24, 1922,
2:30 o'clock P. M.

(Demonstration at gas trap at the Trumble Manufacturing Company, West Alhambra, California.)

Mr. HARRIS.—This is the so-called 1922 model which was purchased by the General Petroleum Company from the Lorraine Oil and Gas Separating Company, in regard to which testimony has been given. The holes in the side, this square hole at the left—at the right of the oil inlet was cut in my presence, and at that time there were no openings in the drum anywhere except the natural openings. The other two openings have been cut since. On the oil inlet pipe inside of the trap is an elbow which has been flared out to a sharp edge and

which has been cut off so that it goes over against the partition. This elbow is at an angle—

The COURT.—You do not describe that exactly when you say it is cut off against the partition. It is simply a part of the baffle.

Mr. HARRIS.—On the outside, your Honor, it is cut off; the other side over next to the partition is machined off. The end of the elbow next to the partition is machined off so as to bring it up against the partition. The elbow is threaded on the inlet pipe and there is a space of probably an inch and a half between the round portion of the shell of the trap and the inlet end of the elbow, the elbow not being fully screwed up on the pipe.

The COURT.—The fact is, the elbow rests against the partition.

Mr. HARRIS.—The elbow rests against the partition and is machined off so it can rest against the partition. The gas outlet from the chamber is on the extreme right, near the top, that is the pipe that goes across to the chamber on the other side. There is a chamber on the other side. Now by looking in that [286] top your Honor can see the tops of both chambers so that we could not see anything until we cut it open. We did not know what was in there, in either of these chambers, until we cut it open.

The COURT.—This chamber over here is the elbow in the partition so it extends over next to the wall of the trap.

Mr. HARRIS.—And there, your Honor, is the

gas outlet pipe that comes down out of that further chamber, on the further side.

The COURT.—This is the gas outlet?

Mr. HARRIS.—This is the gas outlet pipe. In other words, the gas goes through this pipe which we see down here, through from this chamber on this side to the chamber on the far side.

The COURT.—Then it goes down and comes up again.

Mr. HARRIS.—Then it goes down around the partition and comes up.

The COURT.—Now, there is a pipe in the inside coming in from the right. What is the office of that?

Mr. HARRIS.—A pipe coming on from the outside?

The COURT.—Yes.

Mr. HARRIS.—I do not know what pipe your Honor refers to. Just a moment until I get up there. Mr. Lorraine says that is the oil discharge line you see coming in there.

The COURT.—That is the oil discharge line? There is a fixture that seems to be detached.

Mr. HARRIS.—The floats are taken down, the two floats are lying here on the ground.

The COURT.—That fixture operates with the floats.

Mr. HARRIS.—That is a part of the floats.

The COURT.—What is the office of the fixture extending to the outside?

Mr. HARRIS.—Those are the two floats at the bottom. One is the gas valve on the left hand

side, as you face them, and on the right hand side is the oil valve. The gas valve of this [287] pipe and the oil valve in the other pipe on the other side. Now the bottom of this trap is filled with oil and we have placed this elbow on the outside of the oil inlet and have connected the pipes so that oil can be taken out of the bottom of the trap and put back into the trap through the normal hole in the pipe on the trap. We have also provided means for putting gas into this oil before it goes through the pumps so we can apply a mixture of gas and oil in there through this inlet pipe.

The COURT.—Could you put oil through without the gas?

Mr. HARRIS.—We can put oil through with or without gas.

Mr. BAGG.—Mr. Lorraine, have you any further explanations you want to make about this?

Mr. LORRAINE.—Yes, please. I would like to examine this pipe here. (Indicating.)

Mr. BAGG.—Any further explanation?

Mr. LORRAINE.—I would like to state first that this is not a fair test, although we are willing to go through with this test.

Mr. BAGG.—In what respect would you say it is not?

Mr. LORRAINE.—In the first place, the oil level, when this trap is in operation, is as high as that float I am holding, which you see right there, and there is a dam formed here in the incoming oil. In the next place, this pipe is either a 3-inch or 4-inch

and it would not shoot that up in nozzle force, up at the top here as this—

The COURT.—You claim this ought to be the same size as this (indicating)?

A. To here, yes. This would have a tendency to throw your force over here. This is built right up here with froth and foam, as they come from an oil well, and the object of that is to scrub that froth and foam off of the top, and that is a scrubbing chamber over in the other side of the separator.

The COURT.—What do you mean by “scrubbing”?

Mr. LORRAINE.—It takes the crude oil out of the gas, what [288] would remain coming over here, when the froth goes through there, it would clean it as it turns, whip out like cracking a whip.

The COURT.—You say the froth goes through that hole?

Mr. LORRAINE.—Yes, sir, that is the object of that.

The COURT.—That is the gas outlet?

Mr. LORRAINE.—Yes, sir, that is the cleaning chamber.

The COURT.—Well, the froth, is that anything more than gas?

Mr. LORRAINE.—Oil and gas mixed.

The COURT.—That is oil and gas mixed?

Mr. LORRAINE.—Yes, sir.

The COURT.—That goes through there and what becomes of the froth?

Mr. LORRAINE.—That froth drops down into

other oil as it takes the turn around that other partition.

The COURT.—I see, between the two partitions.

Mr. LORRAINE.—Yes, sir, what whips around; it has got to go through to the other side and then drops down to the other side because this pipe runs through to the other chamber.

The COURT.—Then it drops down into the other chamber?

Mr. LORRAINE.—Yes, sir, as it goes below the other chamber it whips what crude oil is in there out, and then the lighter gas comes out the gas outlet. That is the object in that passageway, and that is the object of that scrubbing chamber, to clean this froth. This is all like soapsuds in here, which you would see if you went out there to a well with the oil at high temperature, that is, mixed with gas and oil. This chamber is filled right up here with froth and foam on the other wall, and that is the object of this, is to clean that lighter froth and foam over there in the other chamber. This is built right up with oil when it is operating, and discharges that oil out of that oil discharge valve there (indicating).

The COURT.—That is down below here?

Mr. LORRAINE.—Yes, that is the oil discharge valve on that side, on the exterior, and this is the gas discharge valve.

The COURT.—Over there (indicating)? [289]

Mr. LORRAINE.—Yes, sir.

The COURT.—Now, you say that the partition here does not extend low enough?

Mr. LORRAINE.—The partition is low enough. It is built up with oil when this is separating gas and oil. The oil in that outer chamber is as high as that float I am holding.

Mr. BAGG.—In what other respect would you say that this would not be a fair test? How about the pressure?

Mr. LORRAINE.—Well, of course, a well pump is far different from the pump that they have got on here, and the temperature of the oil would be different. I do not believe it is possible to mix gas and dead oil together like they are when they come from a well.

Mr. BAGG.—How about the water and the sand?

Mr. LORRAINE.—Well, of course, we could eliminate that because there is wells where I would be willing to concede that, where there is no sand in water and nothing but oil and gas.

Mr. BAGG.—Now, then, what, from your experience, as an oil and gas man, would be the effect of having these two openings, all of these openings closed and this practically airtight?

Mr. LORRAINE.—A pressure in here such as would build up with reference to the—

Mr. BAGG.—The effect it would have on the oil as it comes out of that nozzle into the face of this pressure.

Mr. LORRAINE.—Well, the effect would be entirely different. For instance, you could put enough pressure, hold back enough pressure with this trap as these valves are closed up with plugs, both valve outlets, to prevent the well from overflowing in there

at all, providing this shell would stand it. It would be just the same as trying to flow oil against a concrete wall.

Mr. BAGG.—If there is somewhat less pressure in there than in here, in the shell, in the separator chamber, than the pressure in the gas line, or in the oil and gas line, as it comes from the oil well, what effect would that have upon the gas and oil as it [290] comes from the oil well in being discharged into this receiving chamber?

Mr. LORRAINE.—Why, it would start to expand the ends of this elbow here and fill the whole elbow.

Mr. BAGG.—What would be the form, then, in which it would come out? It would be in what kind of shape?

Mr. LORRAINE.—It would be froth and I would describe it as a ray from a lamp, made larger.

Mr. BAGG.—Well, how about the sprinkling can?

Mr. LORRAINE.—Yes, that would be a good illustration for it.

Mr. BAGG.—Now, that condition would not obtain in this separator and apparatus as it is presented here?

Mr. LORRAINE.—No, I hardly think it would; in fact, I know it would not.

The COURT.—Would the pressure inside, supposing these holes were closed, prevent the oil from flowing as readily as it would otherwise.

Mr. LORRAINE.—Yes, it would because you get practically the pressure within there. There is no question about that, but you have a pressure there.

The COURT.—Supposing you had a very heavy pressure, 250 pounds, for instance, would that prevent the oil from flowing?

A. As rapidly, yes; it would flow just the same.

Q. Could you have pressure enough in there so that the oil would not flow at all?

Mr. LORRAINE.—No, it always went to the bottom under all pressures that they put on gas traps and the lighter liquids, always have gone to the top, but not as rapidly.

Mr. F. S. LYON.—I will ask you this question, Mr. Lorraine: Now, then, you have seen how this trap is now connected. From your experience are you able to state where the oil will go on being ejected from this nozzle or—

Mr. LORRAINE.—Elbow where applied?

Mr. F. S. LYON.—Yes. [291]

Mr. LORRAINE.—You mean just as it leaves the elbow?

Mr. F. S. LYON.—Trace the course.

Mr. L. S. LYON.—What the passage of the oil will be when we turn it on. Now, if you can, tell us from your experience.

Mr. LORRAINE.—Well, I never saw this connected up with a reducer here. I can only give you my general idea of where the oil would flow, and it is according to how the oil would be pumped through there, but this oil, under ordinary conditions, would flow right into here, and froth and foam right in there (indicating).

Mr. F. S. LYON.—You know how it is connected. You have said you never saw the inside of your own

trap, but you know how it would flow. Look at this thing and tell us how it will flow in here.

Mr. LORRAINE.—Did I say I never saw the inside of my own trap?

Mr. L. S. LYON.—In operation. Suppose you tell us how this will work now from your experience as a gas and oil man.

Mr. LORRAINE.—It depends on how much pump pressure.

Mr. L. S. LYON.—The more pump pressure the more of the oil will be forced on to the wall of the baffle, and onto the wall of the shell; is that correct?

Mr. LORRAINE.—The more it will be directed over this way, yes.

Mr. L. S. LYON.—And the more pressure that you have in coming as against the pressure that you have inside, the more of it will come onto the inside of this shell; is that correct?

Mr. LORRAINE.—The more pressure, yes.

Mr. L. S. LYON.—The more pressure there is on the incoming gas the more your oil will run down this surface here (indicating)?

Mr. LORRAINE.—Yes, sir.

Mr. L. S. LYON.—And the shell?

Mr. LORRAINE.—Yes, sir. You see this surface is over more than the partition or the shell? [292]

Mr. L. S. LYON.—I am speaking, in my question, about the inside of the shell, of the trap itself.

The COURT.—I see.

Mr. L. S. LYON.—If I understand Mr. Lorraine's statement, the more pressure there is on the incoming stream of oil and gas the more of the

oil will be thrown on to the inner face of the shell of the trap than is distinguished from when there is pressure here going on to the surface of the baffle-plate on the other wall.

Mr. LORRAINE.—I understood your question, Mr. Lyon, as connected to here, at this installation.

Mr. L. S. LYON.—Yes.

Mr. LORRAINE.—Yes, but this trap runs this way, runs full of oil and your oil level is up here, ordinarily, and this chamber is full of froth and foam.

Mr. L. S. LYON.—Your outlet is down where you see it there?

Mr. LORRAINE.—But that doesn't make any difference with the oil level. We can prove that where they are operating.

Mr. L. S. LYON.—If we put 10 pounds pressure on this thing, now, describe to the court where the oil is going to strike. Is it going to float down in the middle or strike on one of these two walls.

Mr. LORRAINE.—Well, I can't tell the Court.

Mr. L. S. LYON.—Why not?

Mr. LORRAINE.—Because you can't put 10 pounds pressure on it.

Mr. L. S. LYON.—If we do where will it hit?

Mr. LORRAINE.—Well, it is operating with pressure on here.

Mr. L. S. LYON.—We have those holes open there, the way it is now. You say you can tell without looking in the gas trap where these things are going to happen. Look at this, will you, please and tell us what it is going to do.

Mr. LORRAINE.—That oil directed from this elbow will hit right in that oil (indicating).

Mr. L. S. LYON.—Will it land on that sand screen over there or will it not? [293]

Mr. LORRAINE.—It would not be deflected on the sand screen.

Mr. L. S. LYON.—Will it float down on that screen or not?

Mr. LORRAINE.—The whole thing will be filled with oil.

Mr. L. S. LYON.—We are going to operate it now, we are going to turn the pump on and let some oil go through there. Can you tell us where it will go?

Mr. LORRAINE.—Oh, on this line.

Mr. L. S. LYON.—Right here, here it is up here now.

Mr. LORRAINE.—There is no question but what you can drive that oil against that wall.

Mr. L. S. LYON.—Will it go on there?

Mr. LORRAINE.—Certainly it will go on.

Mr. L. S. LYON.—Which one will it go on?

Mr. LORRAINE.—With 10 pounds of pressure it would hit this wall (indicating).

Mr. L. S. LYON.—With five pounds pressure which one will it go on?

Mr. LORRAINE.—Well, that is just a matter of guesswork with this reducer here.

Mr. L. S. LYON.—You mean the inner portion of the shell itself?

Mr. LORRAINE.—Yes, sir. It will direct itself right out here.

Mr. L. S. LYON.—If we put 10 pounds pressure on this, if we put 10 pounds pressure on this thing right in here, the way it is connected you are willing to state that the oil will not go on that baffle over there, but will come over on the outside edge of the shell?

Mr. LORRAINE.—No, I would not state that.

Mr. L. S. LYON.—Which will it do?

Mr. LORRAINE.—That will depend on just how this nipple goes up here. If this nipple reached up here enough so that would break the oil through this top surface it would have a tendency to go on that wall. It would depend, too, on how the end of that pipe is cut; it would deflect it in several different ways. [294]

Mr. BAGG.—How about the amount of gas in the oil? Would that have any effect on it?

Mr. LORRAINE.—Well, as I said, Mr. Bagg, it would be a very difficult matter to state.

Mr. F. S. LYON.—Any other question, your Honor, of this man?

Mr. BAGG.—I would like to call the Court's attention to the fact that the oil level in this is away below the partition.

The COURT.—That is very apparent.

Mr. F. S. LYON.—Will you state, Mr. Trumble, how far this pipe extends in here?

Mr. TRUMBLE.—Just a standard thread, inch and a half pipe, screwed into the bushings. We can take it out in a very few minutes.

Mr. L. S. LYON.—I just want Mr. Lorraine to explain. He states he can tell these things.

Mr. LORRAINE.—It would be impossible to tell where the oil would strike with this installation. Anything I have not practiced with—anything I have tested out I am willing to make statements on and I am willing to prove through an actual demonstration.

Mr. L. S. LYON.—You state you can't tell where the oil will go on this before it is turned on.

Mr. LORRAINE.—Because I have never, your Honor, had this out in this manner.

Mr. HARRIS.—This trap is made of five-sixteenths inch steel, very heavy rivets in the top and heavy trap on the incoming oil pipe welded solidly into the shell where it goes through.

The COURT.—What point do you make about that, Mr. Harris?

Mr. HARRIS.—Simply that the trap is made so it will stand heavy pressure. It is not a trap that operates without pressure or they would not use this heavy steel, heavy rivets or heavy top.

Mr. F. S. LYON.—Where was this oil line that you say it always stays? How high up?

Mr. LORRAINE.—This oil level? [295]

Mr. F. S. LYON.—Yes.

Mr. LORRAINE.—Right over close. Depends upon how fast the oil is coming in as to where it stays, right around that flat iron housing on the other side, not on this side. This side is always high.

Mr. F. S. LYON.—How much difference in the level according to your theory will there be in the

level of the oil on this, what we will call the inlet side and on the other, the gas chamber baffle side.

Mr. LORRAINE.—That depends on the density of the oil, how much gas there is in the oil and how fast the oil is coming in. On this side there is a variation in the level of the oil, but on the other side there is no variation to speak of.

Mr. F. S. LYON.—The level of the oil on the other side, you say, always remains below the end of the baffle on that side, must it not?

A. Below, no, sir; above.

The COURT.—He means the baffle on the other side.

Mr. F. S. LYON.—The short baffle, the submerged oil?

Mr. LORRAINE.—Oh, on the outer side, yes, sir.

Mr. F. S. LYON.—The level of the oil must always be below that in order to let it work.

Mr. LORRAINE.—No, it can work without it, but it is supposed to be below; of course, better below.

Mr. F. S. LYON.—If we filled this up so it is coming up there with 5 pounds of pressure upon it, that speed, how many barrels a day would be going through the pipe, as near as you can tell?

Mr. LORRAINE.—I will just tell you how difficult that question is to answer. Our orifices, this size, there is some wells flowing with a hundred pounds pressure, perhaps 600 barrels a day; No. 1 is flowing through less than an inch opening with 1800 barrels a day; at Tonner lease No. 3 I believe at the present it is flowing through an inch beam

and only 300 barrels a day. It depends on the density of the oil, how much can be pumped through [296] that line and also the temperature upon it. No human being can answer your question directly.

Q. Will you be able to tell us about what amount is coming out if it was kept flowing at that rate?

A. I could not. For instance, you could use a piece of glass and it looked like oil and you might guess at that. It depends upon the stickiness, the thickness of this oil, how fast it is travelling; you can only guess.

Mr. F. S. LYON.—If you saw it coming up there can you tell us?

Mr. LORRAINE.—Absolutely not, and no one can tell you by looking at it.

Mr. HARRIS.—It would make no difference if you took the big pipe out and put this in (indicating)?

Mr. LORRAINE.—It would not make any difference with this demonstration; it is not connected like it.

Mr. HARRIS.—Mr. Lorraine says this small pipe going into the elbow on the outside of the trap make no difference in the flow of the oil.

Mr. LORRAINE.—If you had this discharging gas and oil you would have this discharging the gas and oil right in froth and foam.

Mr. HARRIS.—What I want to know is whether our man shall change this pipe connection for you or not.

The COURT.—I would not go to that trouble, no. You can describe the action of the oil as it entered

without the gas into this machine which is now demonstrated.

Mr. LORRAINE.—Well, I should say under this demonstration this throwed oil upon the wall of the partition in a very heavy stream, a stream almost equal to the area of a small two inch pipe that leads up to the four-inch pipe. At no time could I see where there was any volume of oil thrown upon the wall even with that demonstration, with an open volume, that I consider a volume of oil. [297]

The COURT.—There was oil thrown over here, though?

Mr. LORRAINE.—On the wall, yes, your Honor.

The COURT.—On the outer wall?

Mr. LORRAINE.—Yes, sir; I admitted that on the vertical partition it was thrown on the wall.

The COURT.—Now, describe the operation as you see it when so applied.

Mr. LORRAINE.—As I see it when so applied here the stream seemed to me to widen out to a certain extent although there was very little gas in the oil. I must say, comparing that gas with the gas from oil wells, if that is all the gas that was necessary to save from oil that comes from wells, why, I do not think we would need any gas traps.

The COURT.—How did the gas take to the side of the partition and how to the side of the wall,—I mean how did the oil take to the side of the partition and how to the side of the wall with the gas appliance? .

Mr. LORRAINE.—Well, it seemed to flow to me in a thicker stream, more loosely.

The COURT.—What proportion of it ran down the partition and what proportion down the wall, as you observed it?

Mr. LORRAINE.—I should say it was nearly equally divided.

The COURT.—What did you observe as to the foam on there?

Mr. LORRAINE.—As to the foam on the bottom of the trap, why, any oil pumped into a receptacle with an open top, if any force, if it flows any distance, will create a foam or froth regardless of any gas mixing in with it.

The COURT.—Is that the foam that comes with the gas from the well that you see on top of the oil?

Mr. LORRAINE.—I would not say so, no.

The COURT.—Is it similar?

Mr. LORRAINE.—That is a foam that is created by the churning action on the oil as it hits the bottom, the same as the froth [298] or foam that is created with nothing but water that flows a great distance.

The COURT.—How does that appear with the froth or foam as the oil comes from the well?

Mr. LORRAINE.—Well, I should say it would be a very poor comparison, as the oil is mixed so evenly with the gas in so many instances.

The COURT.—So that this is not a good demonstration, then, as to that?

Mr. LORRAINE.—No, I do not think it is.

Mr. BAGG.—I would like to ask him one or two more questions:

Q. You noticed both when the oil was being brought up here or pumped up there and when it was mixed with gas what did you notice with reference to the splashing effect, if any, and did all of the oil go down either the partition or the side walls of the receptacle? In other words, did it go down in a shower, did you notice, or observe whether this oil went in a shower both against the partition and the side walls of the receptacle and down to the center?

Mr. LORRAINE.—Well, I would say that some of that oil hits the wall and some bounced back over at times free from the wall. It was hitting right there where the partition connects on to the shell, right in the crevice like when it was pumped up there and did not bounce over there.

Mr. BAGG.—That is all.

Mr. F. S. LYON.—About how many barrels a day do you think the oil was coming out of that nozzle when the demonstration was made? Just as near as you can. I am not asking for an accurate estimate?

Mr. LORRAINE.—Well, it will only be a guess.

Mr. L. S. LYON.—Just give us your best guess.

Mr. LORRAINE.—I guess about 350 barrels in 24 hours.

Mr. F. S. LYON.—Can we step around to the back of the trap? [299]

The COURT.—Yes.

Mr. BAGG.—I would like to ask the witness one question:

Q. Have you observed that any portion of the oil, as it came out of that receptacle, fell directly down to the bottom without striking the side walls of either the partition or the side wall of the receptacle?

Mr. LORRAINE.—I did not see right down into the bottom, Mr. Baggs. From where I was standing I could not see the bottom.

Mr. L. S. LYON.—Mr. Harris, will you point out the gas and oil outlet valves of this trap and their adjustments on these two valves?

Mr. HARRIS.—As we stand facing with these valves, these two valves, one on the left-hand side and one on the right-hand side, the one on the right-hand side is cut through—

The COURT.—The left-hand side—

Mr. HARRIS.—The left-hand side is connected through a vertical pipe with the gas outlet in the top of the trap. The one on the right-hand side is connected through a shaft pipe with the oil outlet. Two valves are operated on separate shafts, in other words, the shaft that goes into the right-hand valve and the shaft that goes into the left-hand valve are separate, so that either valve can be working independent of the other. Attached to these two operating shafts are two levers which terminate in a slotted connection, each of the valves having its own slotted connection. When the lever on the oil valve is in its extreme upper position, as I understand it, the oil valve is connected.

Mr. LORRAINE.—Yes, sir; that is correct.

Mr. HARRIS.—When the lever on the gas valve

is in extreme upper position, as I understand it, the gas outlet valve is open.

Mr. LORRAINE.—That is it.

Mr. HARRIS.—In the operation of the trap which I saw at the Tonner lease the oil valve was operating somewhere near the middle of its range, and I assume that this trap in its operation [300] will operate somewhere the middle of its range, depending on the flow of gas confined in the trap.

Mr. LORRAINE.—Why, the adjustment on these valves here and the valves on the Tonner lease are entirely different. You can't change the position of the valves on the Tonner lease when once set.

Mr. HARRIS.—These can be set.

Mr. LORRAINE.—These can be set.

Mr. L. S. LYON.—During the time of the test on the Tonner lease did you, Mr. Lorraine, tell Mr. McLean and Mr. Burroughs of the General Petroleum Company that by regulating that gas valve a pressure could be maintained in the tank without putting another back pressure valve on the line?

Mr. LORRAINE.—The General Petroleum Company?

Mr. L. S. LYON.—Did you tell these men that?

Mr. LORRAINE.—At Tonner 3?

Mr. L. S. LYON.—No. Did you tell them that or make such a statement to them?

Mr. LORRAINE.—On that well?

Mr. L. S. LYON.—I don't know whether it was on that well, but did you make such a statement to McLean and Burroughs that by regulating that gas

valve there you could keep a pressure in the tank without having a back pressure valve on the line?

Mr. LORRAINE.—But you can't maintain—

Mr. L. S. LYON.—Did you make the statement?

Mr. LORRAINE.—No, I did not, not like you are making it.

Mr. L. S. LYON.—What did you say to that effect?

Mr. LORRAINE.—I said you could close it in, but as far as maintaining a pressure on it, I did not make that statement, and you can't do it with those valves. If you will take the plugs out I will show you this myself. You can't maintain a pressure unless there was a big volume of gas, or volume of oil maintaining that pressure. In other words, you have to get another machine to sustain the pressure. [301]

Mr. L. S. LYON.—What did you say to McLean and Burroughs?

Mr. LORRAINE.—That is what I said.

Mr. L. S. LYON.—What did you say to them? Just tell us, please.

Mr. LORRAINE.—As near as I can remember, I said, you can regulate either the gas outlet or the oil outlet; you could close it in.

Mr. L. S. LYON.—Did you say a pressure could be made in the trap?

Mr. LORRAINE.—I did not say anything about pressure, no, sir; nothing about pressure; I never guaranteed it to any operator.

The COURT.—Mr. Harris, go ahead.

Mr. HARRIS.—By means of this connection it is

impossible to adjust the relative positions of these valves in various relationships so that the amount of opening in the oil valve and the relative amount of opening in the gas valve can be adjusted in various combinations and to get various conditions within the trap.

Mr. LORRAINE.—That is correct.

Mr. HARRIS.—As I hold it now, as I understand it, the gas valve is entirely closed?

Mr. LORRAINE.—Yes, that is correct.

Mr. HARRIS.—And, as I am holding the right-hand lever, it is about the middle of its stroke, and the left-hand lever which is on the gas valve is at the bottom of the stroke and so arranged both could be put through and apparently together in that manner, under these conditions, the oil valve will be partly open when the gas valve is entirely closed.

Mr. LORRAINE.—That is correct.

The COURT.—Will you explain more fully about the float?

Mr. LORRAINE.—If we could put that mechanism on there we could easily make it more clear, your Honor, and I think it would be fairer to both sides.

Mr. F. S. LYON.—Your Honor understands the oil line comes out this end and the gas line out this?

The COURT.—Yes, I understand that.

Mr. L. S. LYON.—You saw the flow of oil going through the [302] trap on demonstration. How many barrels a day would you say were going down there from your observation?

Mr. HARRIS.—I should estimate at least a thousand barrels a day of twenty-four hours.

Mr. L. S. LYON.—Mr. Paine, from your observation of the same thing, how many barrels of oil would you say you saw going through the trap per day on this experiment?

Mr. BAGG.—I think we will object to that and ask it be stricken out for the reason it is rebuttal testimony, and can be introduced at the proper time and for the further reason neither of these two gentlemen have qualified themselves to testify as to the amount of oil flowing or anything of the kind.

The COURT.—We will hear that on rebuttal, so you needn't take it now.

Mr. F. S. LYON.—We offer, then, all of these facilities that are here for measurements, and so forth, and that is the only object of bringing it up at this time.

The COURT.—All right.

Mr. F. S. LYON.—Your traps are shipped with the regular equipment and a 300-pound pressure gage, are they not?

Mr. LORRAINE.—As a rule they are.

Mr. L. S. LYON.—This is the gage that you ship with your traps to measure the pressure.

Mr. BAGG.—He shipped that because he wasn't able to get anything else, probably.

The COURT.—I think we can take care of that when we get in town.

Mr. L. S. LYON.—We just wanted it to show that we had opened the equipment that came with

this trap and found this 300-pound pressure gage, that is all, your Honor.

The COURT.—Very well.

Mr. BAGG.—Explain to the Court how that works inside (indicating).

The COURT.—Now, you may explain that.

Mr. LORRAINE.—In the interior this rock shaft —(remark [303] inaudible)—this rock shaft operates with the counter-weight arm; I had it here in position and that link connects the valve levers, and when oil goes down in the trap that seals this valve absolutely tight. This valve here impinges on and locks, loops one sleeve around another sleeve, and the same action takes place here in a downwardly motion, when the oil goes up in the interior of the trap, and that would seal that tight, that sleeve impinging itself on and wrapping itself around, and that would flow all the oil into the oil line. When the trap is in operation this lever is in that position and you can see here in the valve, by looking out there, there is an opening in both valves.

Mr. F. S. LYON.—Now, that float arrangement, does your Honor understand that it is an ordinary float?

The COURT.—I suppose the float is to regulate the discharge of oil and gas.

Mr. BAGG.—I would like to call the Court's attention to the size of these two pipes, both the gas pipes and the oil pipe, as being practically the same size as the inlet.

Mr. HARRIS.—All 4-inch pipes.

The COURT.—The amount of the discharge of the gas would be regulated by what?

Mr. BAGG.—By the pressure to the opening.

The COURT.—You say there are two openings to the right?

Mr. BAGG.—Yes, your Honor.

The COURT.—But the supply of gas can be regulated more by pressure than the discharge of the oil?

Mr. BAGG.—I think not. Mr. Lorraine could answer that.

Mr. LORRAINE.—By holding your discharge to the gas openings 100 barrels of oil during that period, the gas line would be open much larger than the oil.

The COURT.—Oh, I see.

Mr. LORRAINE.—So that these work in synchronism, and when one valve—when one valve moves towards open position the other valve toward closing position and the orifice is regulated in the valve according to the volume of gas in the oil that is [304] flowing into the trap and takes care of that automatically. That is not a counter-weight valve or back pressure valve.

The COURT.—Did you say it regulated according to the oil as it is flowing into the trap?

Mr. LORRAINE.—Yes, sir.

The COURT.—As the oil is flowing in the separation is taking place?

Mr. LORRAINE.—Yes, sir.

The COURT.—Doesn't it depend somewhat on

the separation the amount of oil that is running out, or gas that is running out?

Mr. LORRAINE.—Well, I think I can make that plain to you: When there is a large volume of oil flowing into the trap the float rises higher and opens the oil valve just a little more, and it closes the gas valve to a certain extent and moves it towards the closing position, so that permits that big volume of oil to escape. It comes in equal division, that is, what you might call equal division.

The COURT.—The object of the trap is to separate the gas from the oil?

Mr. LORRAINE.—Yes, sir.

The COURT.—Now, then, if you get a good separation, absolute separation, are the valves controlled by the amount of oil flowing in?

Mr. LORRAINE.—That is controlled by the amount of oil flowing into the trap and also controlled by the—

Mr. BAGG.—For instance, just as an illustration: If there was twice as much oil coming in in volume as there was gas, that is, the proportion of the mixture as it comes into the oil from the oil well, as we will say the volume is twice as much oil as there is gas, then the oil line would be opened, its aperture would be opened twice as wide as the gas line in the same proportion. Then, if they came in half and half, then the arm would stand so that the oil opening and the gas opening would be the same. [305]

The COURT.—I think I understand that.

Mr. BAGG.—Yes.

The COURT.—But here is a broad statement. These valves are regulated by the amount of oil and gas that flows inside, I understand that, because the purpose of the tank is a separation of the oil from the gas, and if there were more oil in there than gas, why, of course, the oil valve would be open larger, and if there were more gas than oil it would operate the other way.

Mr. BAGG.—But the oil level would determine that.

Mr. LORRAINE.—We have the same orifice in each valve here that we have in the pipe. You see, when this is in this horizontal position, that gives you the same opening out of each pipe.

Mr. L. S. LYON.—I just want to ask Mr. Lorraine one question: When the oil valve is in this position so that its lever is in the central position, can the gas valve be regulated so that it is completely closed in your device?

Mr. LORRAINE.—No, because the oil level would change that position and immediately open up your gas valve.

Mr. L. S. LYON.—But can it be regulated now as this oil valve is in this position, so that the gas valve is completely closed?

Mr. LORRAINE.—It can't without the other bolt in there; I just put this one bolt in there.

Mr. L. S. LYON.—You could take the bolts out and put it into position, couldn't you?

Mr. LORRAINE.—You could, yes, but you would not have a gas and oil separator, because you would not have anything open at one end of it. That is

the object of having that around there just the right length so it can close it completely.

Mr. L. S. LYON.—What is the reason for having two arms instead of one?

Mr. LORRAINE.—What is the object?

Mr. L. S. LYON.—Yes. [306]

Mr. LORRAINE.—Well, it is to adjust the valve.

Mr. L. S. LYON.—In your patent you only show one arm, don't you?

Mr. LORRAINE.—That is all right. There is another application on this; that wouldn't make any difference.

Mr. L. S. LYON.—The object of having two arms is so you can adjust one with relation to the other.

Mr. LORRAINE.—Well, the principal use of this is so you can raise the oil level. For instance, if you see your oil is getting too much gas, there is too much wastage of gas going out in the stock tank, you can raise or lower your oil level. You put both of these valves down, then you lower your oil level. You raise them up like that and you raise your oil level.

Mr. F. S. LYON.—We would like to have Mr. Harris show the court, if the Court will permit, how these two levers can be adjusted so that a back pressure can be maintained on the gas line in this trap by means of this lever and still have the trap operate as a gas and oil separator.

The COURT.—He can explain that.

Mr. F. S. LYON.—What the purpose of this link proposition is here.

Mr. HARRIS.—By this long lever which is applied to the two short levers the slot is near the central position, and it is so adjusted that in that position there is a certain opening of the oil valve on the right-hand side. It is possible by loosening these bolts to entirely close the gas valve so that the gas valve acts to hold a pressure on the trap. Now, if it was so adjusted and the oil level falls a little bit, the gas valve will be slightly opened and the gas will escape. In other words, it will act as a reducing valve to hold pressure on the interior of the trap.

Mr. L. S. LYON.—And it is so adjusted the trap will operate for the separation of gas and oil continuously?

Mr. HARRIS.—Operate continuously with any pressure in it. In other words, by adjusting these bolts in these slotted arms, which is adjusted to the gas valve which appears on the left-hand [307] side as a reducing valve for the purpose of building up a gas pressure in the top of the trap, you maintain a pressure on the trap?

Mr. F. S. LYON.—What do you consider the reason for those slotted arms on the device, Mr. Harris?

Mr. HARRIS.—For the purpose of adjusting the gas pressure in the interior of the trap.

The COURT.—As you have stated?

Mr. HARRIS.—As I have stated.

Mr. F. S. LYON.—Is there any other purpose you can see or you can understand for making such slots?

Mr. HARRIS.—I cannot see any other purpose for it at all.

The COURT.—Do you think of any other purpose, Mr. Lorraine?

Mr. LORRAINE.—I certainly do. The oil is of many different gravities. In other words, of many different weights. On the top of it it is always lighter when it comes into a gas trap than it is on the bottom of it. You must get an oil that will at least float a float, to operate this machine, and if you see your oil going through with your gas, with this adjustment feature here you can lower your oil level so your froth and foam will be still down low enough so it won't go out with that gas. If you should see gas going with your oil into the stock tank and you want to stop it, why, you can raise your oil level and carry a higher column of oil to prevent that, and that is the object of that, although I am willing to admit that you can choke the flow with this, but you can't keep a pressure on that trap with it; it has absolutely nothing to do, and I can prove it by a trap on an oil well. The minute you do that your pressure is going through that opening you have there, so it will not sustain or maintain a pressure upon the trap.

Mr. BAGG.—In other words, you can set this adjustment here any way you want and with a pressure on your tank as shown by the pressure gage, then you can take that pressure, or you can open your gas outlet and then it will immediately adjust itself and show no pressure. [308]

Mr. LORRAINE.—No, it would not be necessary

to do that. If you shut the flow of oil off, or the flow of gas, the pressure would release them instantly, right there, those valves. There would be no pressure held there whatsoever.

Mr. F. S. LYON.—Mr. Bagg, anything further?

Mr. L. S. LYON.—We will ask the clerk to take that pressure valve that came with the device.

Mr. BAGG.—All witnesses in the case will take notice that the Court is now adjourned until Monday morning at 10 o'clock.

The COURT.—Is that satisfactory to you?

Mr. F. S. LYON.—Entirely.

(Whereupon an adjournment was taken until Monday, March 27, 1922, at 10 o'clock A. M.) [309]

[Endorsed]: In the District Court of the United States for the Southern District of California, Southern Division. (Before Hon. Charles E. Wolverton, Judge.) Francis M. Townsend et al., Plaintiffs, vs. Davis S. Lorraine, Defendant. No. E-113—Equity. Reporter's Transcript of Testimony and Proceedings on Trial. Vol. III. Los Angeles, California, March 24, 1922. Filed Apr. 7, 1922. Chas. N. Williams, Clerk. By R. S. Zimmerman, Deputy Clerk. Reported by G. J. Kennelly, Doyle & St. Maurice, Shorthand Reporters and Notaries, Suite 507, Bankitaly International Building, Los Angeles, California, Main 2896. [310]

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Los Angeles, Calif., Monday, March 27, 1922,
10 A. M.

The COURT.—You may proceed.

Mr. BAGG.—If your Honor please, to-day was the day we agreed to file our answer to the supplemental bill of complaint. I have the answer prepared and have served a copy upon counsel for the other side, but I have not had an opportunity to look it over to see if there is any possible correction to be made, and would like, if your Honor please, to have until this afternoon to file it.

The COURT.—All right.

Mr. F. S. LYON.—Plaintiff offers in evidence this section of the Lorraine trap which was used in the demonstration Friday afternoon. We have sectioned it out and brought in the portion of the baffle-plate, wall elbow, delivery pipe and so forth which your Honor saw.

Mr. BAGG.—If your Honor please, it seems to me that would be a part of their evidence in chief.

Mr. F. S. LYON.—It is part of the demonstration.

(Testimony of David G. Lorraine.)

Mr. BAGG.—And this would not be the proper time to offer it, until they have rested, because the defendant is now having its turn.

The COURT.—I think you had better reserve it for rebuttal.

Mr. F. S. LYON.—All right, your Honor, I thought we had better clear it up right at this point in the record. [312]

**Testimony of David G. Lorraine, for Defendant
(Recalled—Cross-examination).**

DAVID G. LORRAINE, recalled for further examination.

Cross-examination (Resumed).

(By Mr. L. S. LYON.)

Q. I show you a copy of the "Oil Weekly" dated February 25, 1922, and a cut in the lower left-hand side. Do you recognize that cut (handing same to witness)? A. Yes, sir.

Q. What is it a cut of?

A. Why, it is an advertisement of my separator.

Q. Is that a cut of a photograph of an actual device? A. Why, I believe it is; yes, sir.

Q. Do you know where it was taken?

A. Thompson No. 4 of the General Petroleum Company's property.

Q. When, if you know?

A. In March or April, 1921. Now, I wouldn't say just which of those months.

Q. Were you present when the photograph was taken? A. No, sir.

(Testimony of David G. Lorraine.)

Q. Was it taken subject to your direction?

A. Well, yes.

Q. Was that photograph as it appears in the publication handed you correctly show the manner in which that trap was connected and installed?

A. Yes, I believe it does, as near as I can remember.

Q. Now it is a fact, is it not, that in this photograph the gas outlet is shown as provided with a valve which I will mark "X" (marking)?

A. Yes, sir.

Mr. L. S. LYON.—The cut is offered in evidence as Plaintiff's Exhibit No. 20.

The COURT.—Any objection? [313]

Mr. BAGG.—No objection.

The COURT.—It will be received.

Q. (By Mr. L. S. LYON.) What is it in the action of a gas trap that has the effect of regulating or controlling the flow of an oil well?

A. Well, there are several different features that might be considered in a gas trap to regulate the flow.

Q. Well, in your gas trap.

A. Well, to allow the oil to flow out evenly.

Q. Why?

A. Because it is positive and certain in action.

Q. Well, does your gas trap necessarily require the oil coming out of the oil well to flow any evenner than if it just came out of a pipe and didn't go into your gas trap at all?

A. Why, I would say it would, yes.

(Testimony of David G. Lorraine.)

Q. Why?

A. Why, on account of the two valves working in synchronism.

Q. What effect does that have?

A. It maintains an oil level in the trap in the same place.

Q. What effect does the oil level in the trap have on the flow of the oil from the trap?

A. Well, for instance, if you had a trap that only had a pipe and no oil discharge valve to control that oil outlet your oil would go from the bottom of your trap to the upper portion of your trap, and it would cause a clogging or jamming action on your well.

Q. But that would not be the effect if you just permitted the oil to escape out into the atmosphere—if you just had the oil coming out of the flow nipple and running out of the pipe into a sump hole? What difference does your trap make over such a condition as that?

A. Well, it has been proven it makes a great deal of difference.

Q. Well, what is that due to? [314]

A. It is due to just what I have tried to explain to you. If you have a separator or gas trap that will allow the oil to build up into the trap your oil will not escape as fast through the same size orifice as your gas will and consequently it throws the oil and gas into both lines.

Q. Yes, but I am speaking about the oil as it comes from the well. Now when the oil comes from

(Testimony of David G. Lorraine.)

the well and drops out of here what is there in your trap that makes that oil flow steadily and evenly so as to control the production of the well? What is there that differs from merely running that out into the atmosphere? What difference does this trap have on the flow from this pipe than if this pipe was just running out into an open tank?

A. The difference is that there is no stirring action in this gas and oil separator, no churning action.

Q. Well, would there necessarily be any churning action if you just had a reservoir and a pipe running over and running out of the reservoir?

A. Yes, sir.

Q. Why?

A. Well, for instance, you can take a bottle of this oil as it passes from an oil well at a certain temperature, and if you stir it or shake it it will blow the cork out of the bottle. But this action does not take place in this gas and oil separator.

Q. Now, is it not a fact that the only reason that a gas trap regulates the flow of the oil from the inlet pipe so as to control the flow of the well is due to the fact that there is a pressure in the gas trap which will maintain and require the oil to come out in somewhat nearly an even manner?

A. No, we haven't found it so. We have operated these traps in a vacuum and atmospheric pressure, which is, as a rule, called zero pressure.

Mr. BAGG.—I would like to have him answer the question.

(Testimony of David G. Lorraine.)

The COURT.—Very well; answer the question in full. [315]

A. And we have found that these separators will cause the well to flow steadily.

Q. (By Mr. L. S. LYON.) Now, if the pressure in the tank is merely atmospheric pressure is it not a fact that so far as the oil flowing from the well is concerned, just as much oil would flow, and just as freely, as if you didn't have a gas trap on the line at all.

A. Well, with this here separator—

Q. Well, just answer that question.

(Last question read.)

A. No.

Q. Why not?

A. Because we have proved it to be a fact that the well will flow better through the trap.

Q. Tell us why.

A. All right. This prevents—If your well goes to flowing heads it prevents your oil from flowing up into your trap and in place of throwing that oil into your gas line it keeps your oil in the same well. It will not allow your well to flow in heads. It cushions that head and stretches that flow out.

Q. Well, how does it do that if there is no pressure at all on your gas inlet? How does it make any difference about what is down here? The oil will come out of this pipe just as unrestricted, won't it?

A. Why, for a short period it builds up a certain

(Testimony of David G. Lorraine.)

pressure—a very slight pressure—to force that oil from the separator.

Q. Does that pressure make any difference?

A. I contend it causes the well to flow steady.

Q. Now you state that you maintain a certain level in your gas and oil trap. To maintain a constant level you have to take out of your trap as much oil as comes in, do you not? A. Yes, sir.

Q. And it has to flow at just the same amount in an hour as is coming into the trap? [316]

A. Yes, sir.

Q. Now you haven't yet made it clear to me why, if this pipe is connected with an oil well, and there is no pressure on this pipe at all, the oil will not run out of there just exactly the same as it would run into an open chamber. Will you explain that?

A. Well, there are some oil wells that flow like artesian water wells, but very few of them. As a rule they are inclined to flow in heads.

Q. All right. Go ahead and explain.

A. Well, a big volume of oil will be discharged into the trap when flowing under those conditions, and then a large volume of gas.

Q. Now what has that to do with the gas trap regulating the flow from the well? Does the gas trap regulate the flow from the well?

A. Well, in place of it allowing this here oil to come in this separator, this large gusher, it cushions the flow and holds the oil level at the same place. There is a slight variation, of course, in

(Testimony of David G. Lorraine.)

the oil level, but it is very light. It moves your gas valves toward the closing position and holds your oil level within five or six inches.

Q. Now, is it not a fact that a back pressure in an oil-receiving line due to the fact that you maintain a pressure in your gas trap is what regulates the flow from the well?

A. No, I wouldn't say so.

Q. Didn't you so state in your patent, Plaintiff's Exhibit No. 3, beginning at line 92 of page 3 of your specification as follows: "It has been found from practical experience in the operation of this apparatus that there is an increase in the production of oil from the same wells, because of the back pressure in the will line"? Did you state that?

A. Yes, sir; some wells. Very few of them.

Q. Now where does the oil go from this Tonner installation, [317] Defendant's Exhibit "D" from your trap (handing paper to witness)?

A. It goes into either one of these here stock tanks.

Q. It goes in at the top? A. Yes, sir.

Q. The discharge, then, from the oil outlet from your trap into the stock tank is higher than the oil level in your trap, is it not?

A. I believe it is, yes.

Q. How much higher?

A. Well, I couldn't say. It depends upon the ground level here as compared with the ground level of the tank.

(Testimony of David G. Lorraine.)

Q. Now, here is the oil outlet line, is it not, in the Tonner installation. A. Yes, sir.

Q. How much higher is this discharge into the storage tank than the oil outlet in your trap? You give us your best estimate of it.

A. Oh, perhaps three feet; maybe four. I wouldn't be able to estimate that exactly.

Q. Well, say four feet. Now, what was it that caused this oil to flow up this four feet into your trap on the Tonner lease?

A. Well, it might be possible that this oil level is four feet higher than this valve.

Q. It might be? A. Yes.

Q. And what was it, as a matter of fact, that caused this oil to flow up into these tanks on the Tonner lease? Oil will not flow up hill, will it, unless there is a pressure on it?

A. Well, as Mr. Rae stated, when there was 55 pounds pressure on that trap there was ample pressure there to raise the oil over a hundred feet.

Q. Well, then, it is a fact, is it not, that there was a pressure in this tank, in your trap on this Tonner No. 3, [318] sufficient to cause the oil to flow up and discharge into those higher storage tanks?

A. There was a pressure of some kind. There might have been a pressure of the oil—the weight of the oil.

Q. Would the weight of the oil cause it to flow up hill?

A. No, it will not, but it will reach its level.

(Testimony of David G. Lorraine.)

Q. Now, is it not a fact that the discharge point into those storage tanks is higher than the oil level in your trap on Tonner No. 3?

A. I believe it is.

Q. And to have the oil flow into those storage tanks some pressure must have been maintained in that trap?

A. If the oil discharge in the tank is higher than the oil level in the trap it would take some pressure to put it there.

Q. Now, what was the area on the oil outlet valve on your Tonner No. 3 trap when the valve was completely open? A. About fourteen inches.

Q. And what was the area when it was about half open? A. Three inches.

Q. In the normal operation of your trap where would that be—about half open or—

A. You would have approximately the same opening as your three inch line, which is about seven inches.

Q. How much pressure would it require to pass 1200 barrels of oil a day through that three inch oil valve opening and up into this tank, in your opinion?

A. That would depend upon the gravity of the oil and how free it would be from gas,—

Q. Well, you know what oil it was that was coming from that Tonner well. You saw it. Now about how much, in your opinion, pressure would it take to do what I have stated?

(Testimony of David G. Lorraine.)

A. Well, it would take less than a pound on that trap. [319]

Q. You would say a pound pressure?

A. Perhaps.

Q. To run 1200 barrels of oil through a three-inch opening?

A. Yes, sir; about that. It would depend upon the gravity of the oil.

Q. Well, what limits would you say? Would a half pound do it?

A. Well, I hardly think it would.

Q. You state that this gauge in this photograph, Defendant's Exhibit "D," shows the needle down at normal. What size gauge was that? What was the type of the gauge used?

A. An American pressure gauge, I believe.

Q. 300-pound gauge? A. I think so, yes.

Q. Was it like this gauge here that was delivered with this trap that you saw last Friday (exhibiting)?

A. No, it is a smaller gauge than that.

Q. How much smaller?

A. Oh, about two-thirds that size.

Q. It takes a 300-pound gauge? A. Yes.

Q. And the first division is 20 that is marked, is it? A. Yes, sir.

Q. Now how much pressure do you think it takes to register on a gauge like this one I have in my hand, to move the needle?

A. Well, none of those gauges are accurate.

(Testimony of David G. Lorraine.)

Q. How much pressure do you think it takes to move the needle on this gauge I have in my hand?

A. On a high pressure gauge of that kind it would take all the way from two to six pounds as a rule.

Q. To start moving the needle? A. Yes.

Q. Did that Tonner No. 3 gauge have a shut-off like this one I have in my hand? [320]

A. Yes, sir.

Q. Now, referring back to this Tico trap that you say you saw in 1905, where was that?

A. At Humble, Texas.

Q. And what was the name of the well on which it was used? A. I couldn't say that.

Q. What was the name of the company that owned the well?

A. I think it was the Producers' Oil Company, but I am not positive.

Q. Well, do you know?

A. No, I am not positive.

Q. Was Mr. Tico present when that was installed?

A. No, sir, not to my knowledge.

Q. What is Mr. Tico's full name?

A. I couldn't tell you. I don't know.

Q. Did you ever meet him? A. No, sir.

Q. Now, did you know at the time that trap was installed in 1905 that it was named the Tico trap.

A. I was told afterwards that that was the model.

Q. Now before testifying in this case you read and examined this Government pamphlets, Defendant's Exhibit "C," did you not? A. Yes, sir.

(Testimony of David G. Lorraine.)

Q. Who was present when you saw this Tico trap installed in 1905?

A. Well, there were several men making the installation. The only man I knew was Mr. Frank Smith.

Q. And what was his position?

A. Well, I think he was a driller. I met him in Houston, Texas.

Q. Do you know where he is now?

A. No, I couldn't say.

Q. When did you last see him? [321]

A. About three years ago.

Q. Where did you see him? A. In Taft.

Q. Do you think he is in Taft now?

A. I couldn't say.

Q. He was a driller, you say? A. Yes, sir.

Q. And who else was there that you know?

A. Why, I couldn't call any names.

Q. How long did it take him to install that trap there, that Tico trap?

A. Well, I couldn't tell you that.

Q. How long were you there watching it being put up? A. About a day, I believe.

Q. Were you invited there by somebody in the company? A. No, I was not.

Q. What were you doing

A. Why, I was looking for work in the oil field.

Q. Now if you wanted to go to that trap to-day how would you get there? Tell us.

A. You would go to Houston, Texas, and I think there is the T. P. railroad that runs out there about

(Testimony of David G. Lorraine.)

14 miles. You get off at the station and turn to the right and you go about a quarter of a mile, to the best of my memory.

Q. That is as nearly as you can describe where it was. A. Yes, sir.

Q. And you cannot remember the name of the company that it was installed for?

A. I didn't know that, but—

Q. Have you been back there since 1905 to see whether the trap is there or not? A. No, sir.

Q. How old are you, Mr. Lorraine?

A. Forty-five. [322]

Q. Now, this pamphlet, Defendant's Exhibit "C," you have testified that this was printed under the auspices of the Bureau of Mines. Your knowledge of that you gained from reading the pamphlet and seeing what is written on it? Isn't that a fact?

A. I have not read the pamphlet through, no.

Q. Well, how do you know it was printed under the auspices of the Bureau of Mines.

Mr. BAGG.—If the Court please, I don't think the witness testified that it was printed by the Bureau of Mines, any more than that the Court read it and I read it in presenting it to him. I don't think the witness testified to that effect. It is immaterial.

Mr. F. S. LYON.—Is it understood, then, that the witness did not so testify?

Mr. BAGG.—I don't think he did.

Mr. F. S. LYON.—You are willing to stipulate, so far as the record is concerned,—

(Testimony of David G. Lorraine.)

Mr. BAGG.—I will not stipulate anything with reference to it, but it is my recollection that he did not testify as to the source from which it came. It shows upon its face. I probably read it to him. I don't know why it is important and it seems like it is encumbering the record unnecessarily.

The COURT.—It wouldn't help the introduction of it anyway.

Mr. BAGG.—No.

Mr. F. S. LYON.—One of our objections to that is that it is self-serving and not the best evidence, your Honor. If it could be an official document it doesn't prove itself. Our original objection was as to its competency. Now on the cross-examination of this witness, he having been so far the only witness in regard to the document, we want to show very clearly that he has no knowledge of any such original document, so that there can be no question hereafter in regard to the fact that all that is before the Court is simply this paper, Exhibit "C," itself. [323]

The COURT.—I suppose that will be admitted.

Mr. BAGG.—Yes. The only authenticity we know anything about is what it shows on its face and the fact that it came from the Government.

Mr. F. S. LYON.—Well, we don't stipulate that it came from the Government. Our objection is absolutely an objection to its competency.

The COURT.—Very well.

Mr. BAGG.—Well, we reserve the right to prove where we got it.

(Testimony of David G. Lorraine.)

Q. (By Mr. L. S. LYON.) Now you have testified, I believe, that the traps are made for you by the Lacy Manufacturing Company of this city. Is that company contributing in any manner, by payment or otherwise, to the defense of this case?

A. No, sir.

Q. What is the character of the relationship between you and the Lacy Manufacturing Company?

A. None at all.

Mr. BAGG.—I object to that. There are allegations in the complaint with reference to relationship they are not a party to the suit.

Q. (By the COURT.) Well, you have the Lacy Manufacturing Company build this trap?

A. Yes, sir.

Q. And that is the relation you have with them, that you employ them to do that?

A. That is correct.

The COURT.—I think that is sufficient.

Mr. L. S. LYON.—That is all. [324]

Redirect Examination.

(By Mr. BAGG.)

Q. When did you *first the* interior of the Trumble trap?

A. Well, I never saw the whole of the interior of the Trumble trap at any one time, because it was never made so that any personal—as Mr. Paine stated here—could see the interior of it. But the first Trumble trap I saw with the manhole place removed was in March, 1921.

(Testimony of David G. Lorraine.)

Q. Now, you have testified earlier in the day to the fact that when an oil well flowed in heads the sudden inrush of the oil and gas from the well produced a pressure in the trap, or in your trap. Is that correct? A. Yes, sir.

Q. I will ask you to state if you know whether or not that is peculiar to your trap. A. Yes, sir.

Q. I will ask you to state whether or not it is fact that all gas traps connected to wells flowing in heads will have more or less pressure built up in the trap during the time this well is flowing in a head.

Mr. L. S. LYON.—We object to that, your Honor. In the first place it is grossly leading, and in the second place it is the same question which counsel has just asked the witness and the witness answered just the other way. He asked him if that action was peculiar to his trap and he said yes. Now counsel says, Well, is it not true in every trap—just trying to contradict his own witness. And it is leading and calls for a conclusion of the witness as to whether it is true in every trap or not.

The COURT.—The objection is overruled.

Mr. L. S. LYON.—Exception.

A. Any trap, regardless of how it is constructed, if it has an inlet and two outlets, which it must have, if there is a sudden head of oil or gas comes into that trap with the two [325] outlets it will build up a certain pressure; but the oil level is not

(Testimony of David G. Lorraine.)

checked as it is in our trap; the oil level runs higher.

Q. (By the COURT.) Would that cause a back pressure of the oil coming from the well?

A. Yes, sir.

Q. You have been talking about that somewhat, and I think are of the opinion that the back pressure was not a good thing for the oil well.

A. Yes, sir. And that is the oil builds up too high in the trap it will put more of a back pressure on the well and you have to carry a greater pressure.

Mr. BAGG.—That is all.

Recross-examination.

(By Mr. LYON.)

Q. Now, you stated the first time you ever saw a Trumble trap was in March, 1921.

A. The first time I ever saw a Trumble trap with the manhole removed so that I could see inside of it.

Q. You knew, as a matter of fact, how they were constructed before that—maybe not in detail, but as to the principle of operation of the trap?

A. There never was any detail drawing in advertisements, or description, disclosing the Trumble trap, to my knowledge.

Mr. L. S. LYON.—Now read the question and I will ask that it be answered.

(Last question read.)

A. I couldn't say that I did.

(Testimony of David G. Lorraine.)

Q. Well, what did you know about the Trumble trap before March, 1921. Had you ever seen one at all? A. Yes, sir.

Q. When did you first see one?

A. I think it was in 1916 or 1917. [326]

Q. How many Trumble traps do you think you saw between the time you first saw one and March, 1921? A. Oh, perhaps about 150.

Q. Now, when was it that you took the valve to Mr. Rae, the representative of the Trumble Company and tried to interest him in putting the valve on the Trumble trap?

A. I don't know as I tried to interest him in putting the valve on the Trumble trap. What I did was to try to interest him in my trap with my valve.

Q. Did you have a trap at that time?

A. I had a drawing of one; yes, sir.

Q. Did you show it to Mr. Rae?

A. Why, I am not positive; but I showed it to him later on.

Q. You didn't show him anything except the valve, did you, at that time?

A. I believe I did. I only had the valve model with me; but I had drawings with me. But I wouldn't like to say for sure, at that first meeting, that I showed Mr. Rae the drawing of the trap.

Q. And you would not like to say, would you, that you even said you had a trap, outside of having a valve for a trap? A. Yes, sir.

Q. What did you say to him?

(Testimony of David G. Lorraine.)

A. I explained the trap.

Q. Tell us just what you said to Mr Rae.

A. Well, I explained how my trap worked—

Q. Well, tell us what you said.

A. I told him that it had two valves that worked in synchronism and a vertical partition in the trap that held the oil on one side and the float worked in settled oil, but I couldn't tell you the exact words that I used.

Q. And you told him all of that, did you?

A. Yes, sir.

Q. And you showed him a model of the valve?
[327]

A. Just of the valve.

Q. Now what was it you wanted Mr. Rae to do?

A. Why, I wanted him to take me and make me acquainted with the Trumble Gas Trap Company.

Q. For what reason.

A. So that I *could* the gas trap business over to them and make some dealings with them.

Q. Is it not a fact that what you said you wanted him to do was to interest them in putting your valves on their trap? A. No, sir.

Q. Did you say nothing to that effect at all?

A. No, sir.

Q. At no time had you ever made such a statement to Mr. Rae? A. No, sir.

Q. Now, when was it that you first showed those valves and had this discussion with Mr. Rae?

Mr. BAGG.—If your Honor please, I don't see the purpose of any of this testimony. Counsel

(Testimony of David G. Lorraine.)

started in to cross-examine him on when he first saw the Trumble trap, and I don't see what any conversation that he may have had with reference to valves with Mr. Rae has to do with this matter at all or how it is proper cross-examination, and I therefore object to it as unnecessarily encumbering the record.

The COURT.—What is the purpose of it?

Mr. F. S. LYON.—The redirect examination was in regard to when you first saw—or, in other words, knew of—the interior construction of the Trumble gas trap. Now we have already shown on the recross that he brought this valve there. He has testified that the valve was for the purpose of his own trap. We are now laying a foundation for impeachment. If he denies that he knew of the construction at that time we will show by Mr. Rae that the whole conversation was with regard to the Trumble trap and this was simply a case at this time of his presenting this outside [328] doublevalve and an attempt to get Mr. Rae interested in that and having the Trumble Company put it on its traps.

Mr. BAGG.—Well, suppose that that is the purpose of it, your Honor, you can only impeach a witness on some material matter, and that is not material to this case, about any conversation that he may have had with this proposed witness Rae with reference to the construction of some valve to go on his trap. That has no connection whatever with his having seen or known the interior

(Testimony of David G. Lorraine.)

or the working mechanism of the Trumble trap, and he can only impeach the witness on a material matter.

Mr. F. S. LYON.—To make the question of impeachment more direct, we will, in this connection, ask the witness if at the time of the presentation to Mr. Rae of this model of the valve he did not discuss with Mr. Rae the interior construction of the Trumble gas trap.

Mr. L. S. LYON.—And how your valves could be very easily put on and worked with the Trumble trap.

A. I had already installed—

Mr. BAGG.—Just a moment.

The COURT.—Just a minute.

Mr. BAGG.—We object to that as immaterial and not tending to prove or disprove any of the issues of this case. It doesn't make any difference what their conversation was with reference to the matter. The question I asked him was when he first saw the interior of a Trumble trap.

The COURT.—They are trying to prove now that he had prior knowledge of the interior of the trap.

Mr. L. S. LYON.—Yes.

The COURT.—I will allow the question in that form.

Mr. BAGG.—All right.

The COURT.—You can answer that shortly, without taking up much time.

A. I have already installed a trap with those

(Testimony of David G. Lorraine.)

valves on it with the Southern Pacific Company near Taft.

Q. (By the COURT.) Well, what have you to say about obtaining [329] knowledge from this patent as to the interior of the trap?

A. I hadn't obtained any knowledge from the interior of the Trumble trap. When I exhibited this valve model of my trap I had already built one and had it installed and found that it operated very successfully.

Q. (By Mr. L. S. LYON.) Was that the K. T. & O. trap you have told us about?

A. Yes, sir.

Q. Now, when was it you first had this discussion with Mr. Rae?

A. It was after I had installed the trap, about—

Q. Well, what was the date?

A. I couldn't say the exact date.

Q. What is the nearest date you can give?

A. Why, I should think it was in—I know the year; it was in 1920.

Q. At what time in 1920?

A. It was in April, because I had just come from the trap. In the middle part of April.

Q. Now, you didn't discuss with Mr. Rae at all how your valves could be fitted on a Trumble trap?

A. No, and I didn't see how they could.

Mr. BAGG.—Now, if your Honor please,—

The COURT.—Well, that is getting beyond the question here.

Mr. L. S. LYON.—That is all.

Mr. BAGG.—That is all. Now, if your *Honor*, we have, in the first place, the certified copy of the letters patent of the United States to George L. McIntosh, Assignor, granted March 11, 1913. We would like to have this marked Defendant's Exhibit "E."

Mr. F. S. LYON.—This is not pleaded in the answer, and I suppose the offer is limited to show the state of the art.

Mr. BAGG.—Yes, sir. That is all we want.

The COURT.—Yes. [330]

Mr. BAGG.—Now, for the same purpose we wish to introduce a certified copy of the letters patent to Walter Anderson Taylor, granted April 29, 1890, and would like to have it marked Defendant's "F."

For the same purpose we wish to introduce in evidence certified copy of letters patent of the United States to Arthur W. Barker, granted July 13, 1909, and I will ask that it be marked Defendant's "G."

For the same purpose we have the certified copy of letters patent of the United States, Ustes Vivian Bray, granted January 16, 1912, and ask that it be marked Defendant's Exhibit "H."

We also have the letters patent of the United States, a certified copy, to Augustus Stiger Cooper, granted March 20, 1906, and ask that it be marked Defendant's Exhibit "I."

We have the certified copy of letters patent of the United States granted to Albert T. Newman,

(Testimony of Walter P. Johnson.)

Assignor, June 4, 1907, and ask that it be marked Defendant's Exhibit "J."

Now, if your Honor please, we have a witness here whom we want to let go, and would like to put him on the stand now so that he may go back to this work, and I will ask Mr. Johnson to take the stand if that is agreeable.

Testimony of Walter P. Johnson, for Defendant.

WALTER P. JOHNSON, a witness called on behalf of the defendant, having been first duly sworn, testified as follows:

Direct Examination.

(By Mr. BAGG.)

Q. Please state your name, age, place of residence, occupation?

A. Walter P. Johnson; age 20; residence 824 E. 29th Street, this city; occupation Machinist.

Q. What company are you employed by?

A. The Lacy Manufacturing Company.

Q. Are you engaged in any part of the building of the [331] Lorraine gas and oil separators?

A. How do you mean that?

Q. Well, do you have anything to do with the building or construction of them down there in the shop? A. I do.

Q. Were you employed by the Lacy Manufacturing Company at the time the oil and gas separator which was sold to the General Petroleum Company—March 17, 1922? A. Yes, sir.

(Testimony of Walter P. Johnson.)

Q. Did you have anything to do with the installation of the partition in the trap? A. I did.

Q. I will ask you to state, if you know, in the first place whether any part of the outer edge of the outlet of the elbow that is installed in that trap was machined or ground off.

A. It was ground off by hand.

Q. I will ask you to state if you know why that was ground off.

A. Because of a mistake in the setting. It was necessary to grind off the end so that the baffle-plate would seat down into place.

Q. (By the COURT.) You say that was a mistake in seating?

A. In seating. It was a mistake in seating.

Q. (By Mr. BAGG.) I will ask you to step down, if you will, and examine this part of the trap which leans there against the wall, and, if you can, explain to the court what you mean by that answer.

(Witness leaves stand and discusses exhibit.)

A. You will notice this is very close there now.

The COURT.—This is the same trap we had before?

Mr. BAGG.—Yes.

The COURT.—I examined that very thoroughly.

A. That was just a mistake in this nipple. This part is assembled first, and is supported from the outside threads, and [332] it was—the nipple seated or was let through a little too far before it was welded in, and then it was necessary to grind off the end to let this plate down. These plates

(Testimony of Walter P. Johnson.)

are made to size and have to go down over a certain size, and we filled it up and kept it from touching here on the side.

Q. I will ask you to state whether you are familiar with the construction of the other traps of this type that have been put out by the Lacy Manufacturing Company for Mr. Lorraine, the defendant in this case.

A. I have seen different types manufactured since that time.

Q. I will ask you to state whether, if you know, any other of the elbows that have been installed in any other traps have that face or edge cut off as you have described in this particular trap.

Mr. F. S. LYON.—We object to that as leading and suggestive. If the witness knows these things he ought to be able to describe them without the words being put in his mouth.

The COURT.—I will hear the answer. I think the question is a little leading, but I think he has already answered it, really.

(Last question read.)

A. No; there has been none since that manufactured to my knowledge.

Q. Do you know whether any were done that way before this trap?

A. I say, not to my knowledge.

The COURT.—Who constructed this model.

Mr. BAGG.—I think this man worked on that.

The COURT.—This model here.

Mr. BAGG.—Oh, no.

(Testimony of Walter P. Johnson.)

Mr. F. S. LYON.—No, we made that model.

Mr. BAGG.—That is all. [333]

Cross-examination.

(By Mr. F. S. LYON.)

Q. How much did you have to grind off this elbow in this trap which is here in the courtroom in order to make it fit?

A. I didn't measure it.

Q. You didn't do it?

A. I didn't measure the amount that I ground off.

Q. Well, did you do the grinding?

A. I did it myself.

Q. What is your best approximation of the amount that you ground off?

A. Well, to the best of my recollection, about three-eighths of an inch.

Q. Then the mistake that was made in setting, as you say, this unit in before welding it in place was by sliding it in three-eighths inch too far; is that it?

A. No, it was slid a good deal more than three-eighths too far.

Q. Then how about grinding it off three-eighths of an inch and no more to remedy the difficulty.

A. Well, all that was necessary was for the plate to set down, and three-eighths inch is sufficient to allow it to clear.

Q. Now, are you positive that no others of those elbows that went into any of these traps were

(Testimony of Walter P. Johnson.)

ground off in a similar manner. Do you know that of your own knowledge?

A. Well, I wouldn't—I will swear to you that any that I have worked on didn't have.

Q. Well, you didn't put them all in? A. No.

Q. Did you have working drawings for that construction of the trap? A. I don't know. [334]

Q. Were there any drawings for that trap there in the shop that you saw? A. Yes.

Q. Under whose instructions did you work in that shop on the work that you did on the Lorraine traps?

A. Under the foreman's instructions.

Q. What is his name? A. Ludkey.

Q. Then you made these assemblies under his direction and supervision, did you?

A. Well, it was to be under my supervision—

Q. Answer the question. Did you make them under Mr. Ludkey as the foreman's supervision and direction? A. Yes, sir.

Q. You don't know to what extent he had detailed drawings, do you? A. I do not.

Q. Did you ever see any detail drawings for this trap there? A. Yes.

Q. Well, what drawings did you see there?

A. I couldn't say.

Q. Did you see any drawings for the elbow or nipple or its assembly?

A. I couldn't say as to that.

Q. You don't remember, is that it?

A. No, I do not.

(Testimony of Walter P. Johnson.)

Mr. F. S. LYON.—That is all. [335]

Redirect Examination.

(By Mr. BAGG.)

Q. Mr. Johnson, do you know how far it is customary to place the edge of that elbow from that partition?

Mr. L. S. LYON.—we object to the witness being asked how far it is customary. He might be asked how far he put in any that he made.

Q. (By Mr. BAGG.) Well, if at all.

A. We measure them to see if the baffle will seat down.

Q. Then there was no particular specified distance that that was to be placed from the baffle-plate?

Mr. F. S. LYON.—We object to that as leading and suggestive. The witness has stated what he did. He has not had the drawings. He said that they adjusted them so that the baffle will seat down in place. Now I think that is as far as he can go.

The COURT.—He may answer.

(Last question read.)

A. I wouldn't say that there was any specified distance. There may be. I didn't have it.

Q. (By the COURT.) Did you construct that according to drawings? Did you work according to drawings in your shop? A. Yes, sir.

Q. Now did you construct that contrivance according to drawings? A. No, sir.

(Testimony of Luther L. Mack.)

Q. You just simply had instructions how to do it? A. Yes, sir.

Mr. BAGG.—That is all. [336]

Testimony of Luther L. Mack, for Defendant.

LUTHER L. MACK, a witness called on behalf of the defendant, having been first duly sworn, testified as follows:

Direct Examination.

(By Mr. BAGG.)

Q. Please state your name, age, place of residence and occupation.

A. Luther Mack, age, 42; residence, South Pasadena; occupation, Patent Attorney.

Q. How long have you been engaged in the business or profession of patent attorney?

A. About 12 years.

Q. Prior to your going into the business of patent attorney what other business were you engaged in?

A. Mechanical engineer.

Q. And before that what?

A. Well, I was a mechanical draftsman for a number of years before that.

Q. And you are still a draftsman as well as patent attorney? A. Yes, sir, I still am.

Q. I will ask you to state, Mr. Mack, if you have examined the file wrapper in connection with the Milon J. Trumble patent, a certified copy of which has been introduced in evidence and marked Plaintiff's Exhibit No. 2. A. Yes, I have.

(Testimony of Luther L. Mack.)

Mr. F. S. LYON.—I object to that as immaterial and not the proper subject of expert testimony. The file-wrapper can only be used in any case to show the prosecution of the Trumble application in the Patent Office, and on its face it shows what it is relevant for.

The COURT.—I don't know what is coming. I will allow [337] the question so far.

Mr. BAGG.—I was just asking him if he had examined it, that is all, your Honor, right now.

Q. I will ask you to state if you have examined the certified copy of the patent issued to Albert T. Newman and marked Defendant's Exhibit "J" which I hand you (handing same to witness)?

A. Yes, sir; I have.

Q. I will ask you to explain to the Court from the drawings and specifications as set out in that patent how that instrument or device described therein operates.

Mr. F. S. LYON.—We object to that on the ground that it is incompetent, no foundation laid, the witness not have qualified to answer the question. He has simply stated that he is a mechanical engineer and not that he knows anything about gas traps or their purpose, function or effect. He is merely a patent attorney and is a scribe or preparer of specifications for patents.

Q. (By the COURT.) I suppose you have had experience in obtaining patents, making drafts and supervising drafting, and so forth?

A. Yes, sir, for 12 years.

(Testimony of Luther L. Mack.)

Q. And have obtained patents?

A. Yes, sir; many of them.

The COURT.—I will overrule the objection.

Q. (By Mr. BAGG.) Proceed now and explain to the Court just how that patent works.

A. In the Newman patent there are two cylinders or receptacles marked “a” and “b” which are similar or nearly similar in size and arrangement, the lower part of which is adapted to receive oil and the upper part forms a chamber for the reception of gasses and oil. The oil and gas are admitted to the two cylinders through pipes “g” and “h” which project downwardly to the tops and are divided into a plurality of nozzles or jets marked “g-2” and “h-2” in the patent. The interior of the receptacles “a” and “b” have deflectors marked “K-prime” in the [338] cylinder “a” and “L-prime” in cylinder “b,” against which the force of the oil is projected, causing the oil to be broken up, and so as not to disturb the volume of oil below the deflectors, the oil that is discharged through the bottom there feeding “cc” and outwardly and through a pipe “e.” There is a float in one of the cylinders “b” not shown in cylinder “a,” marked “m,” which automatically regulates a valve “o” for discharging the oil therefrom. Of course this is from a superficial examination of this patent as described in the application for patent.

Q. Now, Mr. Mack, I will ask you to state if you know where the gas would come off, or where

(Testimony of Luther L. Mack.)

would the gas come, after it struck this baffle-plate or deflector?

A. The oil and gas come in together through the pipes "g" and "h," and the gas is released into the upper chamber or expansion chamber by the cylinders "a" and "B" and then is discharged therefrom through the next "a-3" and "b-3" and pipes "jj" which lead to a common pipe "j-2."

Q. Now after the oil strikes this deflector would any oil or gas come off from below the deflector?

Mr. F. S. LYON.—We object to that as incompetent, the witness not having qualified to answer the question. He has not shown that he knows anything about gas separators or that he has had any experience in oil; and, further than that, that inasmuch as these patents are offered in evidence solely for the purpose of showing the state of the art they are good for that purpose only so far as they show on their face themselves, and there is a written description connected with them which describes the operation and all.

The COURT.—I will let him answer the question, because the man is an expert, and his testimony may throw some light on the question we are trying to determine.

Mr. F. S. LYON.—It is not shown that he knows, actually, anything about what would be the operation in an oil well, with [339] oil and gas mixed, or that he ever had anything to do with oil wells or gas. He may be a mechanical engineer, and he may be a patent solicitor, but I doubt very much if every

(Testimony of Luther L. Mack.)

patent attorney or every mechanical engineer knows the action of this intermingled natural gas and oil coming out of oil wells. We have a description here in this particular device of the patent, second paragraph. It says: "Operation of the device is as follows," and it is described right there, and I don't think it is competent to contradict or change that description at all, what was given to the world by this patent. In other words, this is a part of the art. It is what was shown in the drawings and what was described there.

The COURT.—I suppose the Court will be governed by what is shown there, but, as I have remarked before, this man is an expert and is here for the purpose of elucidating that patent, and I will overrule the objection. You may answer.

(Last question read.)

A. Well, the force of the jet of oil and gas which comes through the pipes "g" and "h" would be downwardly, and if there were pressure in those pipes it would be projected very forcibly against this deflector "K-prime" and the hood or the deflector "L-prime" in cylinder "b." Naturally, the gas would then be liberated from the oil and would rise in expansion chambers and be discharged through the neck "a-3" while the oil would go down over the inclined surfaces of the deflector "K-prime" beyond the wall and then downwardly into the oil body below. The oil would strike and then subdivide in such way that—

The COURT.—What is the date of that patent?

(Testimony of Luther L. Mack.)

Mr. F. S. LYON.—1907.

Mr. L. S. LYON.—We make the further objection to this patent that this is not in the art to which this invention pertains. It is not the separating of oil and gas,—it is for a water well. It starts, at the top of it here, “water and gas separator.” It has nothing to do with the oil industry at all, and does not belong to this art, and it is introduced solely to show the state [340] of the art and does not show what is the state of this art at all.

Mr. BAGG.—If your Honor please, it is an instrument for the purpose of separating gas from water, which is very similar, and we take it it would be equivalent, because of the fact that the water comes from these artesian wells impregnated with this gas and it becomes necessary to separate the gas from the water, and it is the same kind of gas, as I understand, that comes with the oil, the only difference being that in the oil and gas separator it separates it from the oil and in this case it separates the gas from the water, but the action is the same.

Q. (By the COURT.) Could that be used for the separation of oil and gas? A. Yes, sir.

Q. You are of that opinion, are you?

A. I am of that opinion; for the reason that, if my memory is correct, this is one of the citations mentioned in the file-wrapper. I am not positive about that.

Q. In the file-wrapper of the patent suit?

(Testimony of Luther L. Mack.)

A. Of the patent in suit; yes, sir.

Mr. L. S. LYON.—We make the further objection, your Honor, that is the defendant is estopped in this case claiming that the action of water is the same as oil. The Court ruled out testimony in regard to experiments when the defense stated that the action of water was not a fair test or representation of what oil would do in one of these devices.

The COURT.—Well, this patent has already been introduced without objection.

Mr. BAGG.—Now, if your Honor please, that is the only one we have with reference to water anyway; the rest of them are oil and gas separators.

The COURT.—Very well. You had better take up another patent. [341]

Mr. BAGG.—Yes.

Q. Now, Mr. Mack, I hand you Defendant's Exhibit "E," which is a certified copy of the letters patent issued to George L. McIntosh, assignor, and ask you to describe its action or the action of the device described therein when it comes to separating oil and gas.

Mr. F. S. LYON.—If you Honor please, may we understand that our objection to the testimony of this witness, as to its foundation, and so forth, in regard to any attempt to explain these devices, is in, the one your Honor overruled a moment ago, and our exception?

The COURT.—Yes.

Mr. F. S. LYON.—On the ground that he has not

(Testimony of Luther L. Mack.)

shown any familiarity with the action of oil and gas and has had no experience in the oil business whatever.

The COURT.—Very well; the objection will be overruled.

Mr. F. S. LYON.—And that will go to all these inquiries on the same line?

The COURT.—Yes.

Q. (By Mr. BAGG.) Now explain to the Court how that is—

A. This device has a receptacle marked “4.” The device is called a mechanism for separating gas from liquids, with an inlet marked “3” at the bottom, substantially in the center of the receptacle, and projecting upwardly thereinto. The inlet has two or three deflectors on its upper end, against which this volume of liquid and gas projects when they overflow from the upwardly-projecting end, and the volume of oil collects in the lower part of the receptacle while the gas collects in the upper part. There is an outlet for the gas, marked “9,” which has a hooded opening “10” above the level of the oil through which the gas is discharged from the expansion chamber, and the oil is taken off through an outlet “7” on the side.

Q. I will ask you to further examine the upper portion of this trap or device and explain to the Court the construction [342] of this upper portion, this hood here.

A. Well, the receptacle is composed of two parts, one of which telescopes into the other, the lower

(Testimony of Luther L. Mack.)

part being the larger in diameter, and the top of the upper part is crowned.

Q. I will ask you to state what the effect, if any, of this sliding or this telescoping of this upper portion into the lower portion would be upon the pressure in the expansion chamber, as you call it, and particularly in the gas-collecting chamber?

A. Well, I couldn't answer that question, I believe. I don't understand that those upper and lower portions are relatively movable. Of course if the upper portion "8" were movable with respect to the lower portion, a pressure which might be created in the upper portion would cause the elevation of the one with respect to the other.

Q. And what would be the effect as to maintaining a pressure in that receptacle?

A. Well, of course the weight of the upper portion would to a certain extent serve to maintain a pressure.

Q. A constant pressure?

A. A constant pressure.

Q. (By the COURT.) Is that air-tight between the two compartments?

A. I don't understand it to be. But that would be the effect in that case.

Q. Has that patent been used with success?

A. I don't know.

Q. (By Mr. BAGG.) I hand you herewith certified copy of letters patent of the United States dated January 16, 1912, and issued to Eustice Vivian Bray, Assignor, and ask you to describe the

(Testimony of Luther L. Mack.)

workings of that to the Court (handing paper to witness).

A. This device is for the purpose of separating gas from liquids and includes a receptacle having a conical lower portion "1" which is adapted to receive and hold a volume of oil or [343] liquid, and an upper portion "2" and a conical top "3." The oil and gas, or the liquid and gas, is admitted into the center of the top portion "3" through the pipe "16" and is projected downwardly into the lower portion "1." The bottom of the tank has a valve "5" that seats in an outlet "4" and is controlled by the level of the liquid through the agency of a float marked "7." The upper portion "1" of the receptacle has a plurality—three being shown—of imperforate cones, one above the other. The liquid collects in the bottom after having been projected on to and percolating down through these openings in the cone, and the gas rises into the top and is discharged through a pipe marked "17."

Q. Does that run down the wall as it passes through those cones?

A. In my opinion a quantity of that oil would run down the walls of the receptacle at least from a point immediately below the lowermost cone, only provided the apertures which are marked in the cone are so remotely spaced from the wall that it might by gravity drip off into the bottom. But, as shown in Figure 3, the apertures are very close to the side of the wall, and in my opinion at least

(Testimony of Luther L. Mack.)

a film of the liquid would run down underneath the surface of the lower cone and thence downwardly over the outer walls into the liquid. There is an overflow pipe marked "20" which connects with the side of the receptacle and projects downwardly below the normal level of oil for removing any surplus amount of oil in case the float "8" does not perform its work properly.

Q. Now, I will ask you to state whether or not this float "8" is so constructed as to maintain an oil level above the intake part of the oil outlet.

A. The float is so arranged as to at all times, under normal and proper operation, keep the mouth "22" of the overflow outlet submerged.

Q. I hand you herewith Defendant's Exhibit "I" which purports to be a certified copy of the letters of the United States [344] to August Steiger Cooper, dated March 20, 1906, and ask you to explain its operation to the Court (handing same to witness).

A. This is a device for the separation of oil, water and sand as done under that patent, and includes an elongated cylinder "A" which is arranged to receive oil, water and sand in the bottom of the receptacle, and has an inlet marked "b" in the form of a pipe which is arranged tangentially with respect to circumferences of the cylinder. This pipe has a continuation in the form of a blade, marked "A," so that the force of the oil and gas and other elements may be directed into the tank in a line tangent to the circumference of

(Testimony of Luther L. Mack.)

the tank and will continue. The oil will then be discharged on to the inner surface of the tank in sheet form and will be continued in a circle around the inner side, from whence it will drop downwardly into the oil below over the wall of the tank. The gas is discharged from the upper chamber of the tank above the level of the oil through a pipe marked "F," and the lower end has a draincock or sediment-cock marked "A-3" through which the sediment may be drawn off. The oil is taken out through a submerged outlet pipe "C" with a goose-neck on the inner end so that when that outlet is submerged and as the oil reaches a certain level it will drain off. It will nominally maintain a certain level of oil in there, and there is a valve marked "C" which is controlled by a float for regulating the discharge of oil.

Q. Now, as the oil level rises in the bottom of this receptacle, what effect does that have upon the float and the valve operated by that?

A. Well, the float will rise and the valve will open so as to discharge the surplus amount of oil.

Q. And what takes place when the oil gets below the predetermined point?

A. The reverse operation of the float will be effected and the valve closed.

Q. What, if any, effect has this peculiar arrangement at [345] the mouth of the inlet pipe with reference to the effect that it has upon the incoming oil and gas as it strikes the walls of the expansion chamber?

(Testimony of Luther L. Mack.)

A. Well, it would spread the volume of oil out over the inner surface of the tank in a thin sheet or film, and then, of course, by gravity the oil so spread would gravitate down into the body of oil below.

Q. And where would the gas separate from the oil in this particular device?

A. It would separate during the time this was spread out into a sheet. That is the purpose, as stated in the patent, for spreading it, so that the gas would be liberated from the oil.

Q. Then it would come from within this film of oil as it flows down the side wall of the receptacle?

A. Yes, sir.

Q. Is there a valve in connection with the gas outlet? A. There is no valve shown.

Q. I hand you Defendant's Exhibit "G," which is a certified copy of letters patent issued by the United States to Arthur W. Barker, granted July 13, 1909, and ask you to explain to the Court the operation of this particular trap (handing same to witness).

A. This device has a—

The COURT.—What is that called?

The WITNESS.—Natural gas separator for separating gas and oil.

A. (Continuing.) —the device includes a cylinder "1" to which oil is supplied through pipes marked "4," "5" and "6," a valve "11" being interposed between sections "4" and "5." The portion "6" of the inlet pipe is directed upwardly

(Testimony of Luther L. Mack.)

into the tank and has a spreader "7" on the top so that the force of the oil which is discharged from pipe "6" will be spread outwardly from the top and the oil broken up so as to liberate the gas and collect it in the upper portion of the cylinder. The oil is [346] collected in the body of the cylinder and is taken off through an overflow pipe marked "9" having a vent "10." Gas is taken off through a vertical pipe marked "12" having duplex nozzle "13" on the top, so that as the gas collects in the upper portion of the chamber it will be discharged through the portion "13" downwardly and direct to any suitable point. There is a drain pipe "3" with a valve on it at the intake tank, also for draining off the sediment or the oil when it gets below the pipe "9."

Q. (By the COURT.) That doesn't show the oil settling clear across the tank.

A. No, it doesn't, but there would be.

Mr. BAGG.—That is all.

Cross-examination.

(By Mr. F. S. LYON.)

Q. Did you ever see any of the traps in these prior patents to which you have referred in your direct examination in operation? A. No, sir,

Q. Do you know whether any of them were actually used? A. No, sir.

Q. Referring now, first, to the Cooper patent No. 815,407, Defendant's Exhibit "I," are you familiar

(Testimony of Luther L. Mack.)

with the principle upon which the well-known Cyclone Dust Collector is operated and based?

A. No, sir.

Q. Do you know what would be the effect and result upon the shell of this Cooper device of the projection of the blast of intermingled oil, sand and gas against it in the manner of the tangential blast referred to in this patent?

A. You ask me if I know. I wouldn't say that I know. I would say I believe.

Q. You have had no experience with it?

A. I believe it is as I have stated. [347]

Q. You have had no experience with it?

A. No.

Q. Are you able from any experience to tell us whether such blast of sand, oil and gas would cut through the side of such container and render the device inoperative? A. Not with oil and gas; no.

Q. You don't know? A. No. I do not.

Q. Then you agree that the operation of this device would be as described in the specification of the patent, and that is that: "Gas, oil, water, silt and sand are forced from near the bottom of the well by the compressed gas and pass through the pipe B into the cylinder A. Entering the cylinder under pressure tangentially to its circumference, the material thereby given a rotary motion, which separates the constituents conformably to their specific gravities. The gas rises and passes from the cylinder through pipe F to the compressor. The sand seeks the outer circle and drops down to the

(Testimony of Luther L. Mack.)

bottom, as is indicated by "S." You agree that that would be the operation, do you?

A. No, not necessarily.

Q. Are you able, from any experience you have had, to state what effect the scrubbing action of sand in the mode of operation specified by Mr. Cooper would mean?

A. Any matter, any element or any substance projected into a receptacle like that or given a motion like that would naturally seek the outer surface, theoretically. It doesn't always do it. Now, with oil and sand I am not able to state how the thing would work. If you would ask me how a sheet of water would be thrust around the inside of that, I would say unquestionably it would be so, because I have done it in experimenting.

Q. I ask you that question in regard to the well-known Cyclone Dust Collector, because that is the device used for separating air from shavings and sawdust, and so forth, in lumber-mills and all kinds of dust in factories from the air—the [348] same tangential whirling device. Now, I have also asked you the question whether you knew what would be the effect of the sand in an oil well being whirled about and thrown against the inner periphery of the shell of the trap. Can you state any knowledge in that regard?

A. I cannot state any knowledge; no, sir.

Q. You are then unable to state whether or not the reason why this Cooper trap never went into

(Testimony of Luther L. Mack.)

use was because it would immediately wear out due to the attrition of the sand on the metal, are you?

Mr. BAGG.—Now, we object to any inquiry with reference to that because of the fact that the Cooper trap “has not gone into use.” There is no evidence here to show it has not gone into use. It is a patented article and I don’t think it makes any difference whether it went into use or not.

The COURT.—Strike out the assumption that it has not gone into use and ask your question without it.

Q. (By Mr. F. S. LYON.) Well, answer the question without the assumption that it has not gone into use, then.

A. I would like the question read as it now stands.

(Question read.)

Mr. F. S. LYON.—I will restate the question.

Q. You are unable to state from any practical knowledge, then, whether or not the grinding action of the sand delivered with the incoming oil and gas would erode and destroy the shell of the trap if constructed and operated as disclosed and described in this Cooper patent, Defendant’s Exhibit “I,” are you?

A. No; I am not unable to state it. Of course there is an abrasive action on any parts that would be exposed to sand or any last, under pressure—no question about that—and a gradual wearing away. But how long it would take it to wear away the cylinder for that purpose would depend upon

(Testimony of Luther L. Mack.)

its thickness, hardness and temperature, and so forth.

Q. You are not familiar, are you, with any of the working [349] conditions in oil wells due to the sand in the oil?

A. Why, no, I can't state any positive knowledge of conditions at an oil well or of the operation of any of these devices from actual experience. It is theory.

Mr. BAGG.—If your Honor please, I think I will object to this line of examination for the reason that it is immaterial and does not tend to prove or disprove any of the issues of this case. Whether or not the Cooper trap went into operation has no bearing upon the state of the art. The mere fact that it was once patented and described and the disclosures made in the Patent Office would be sufficient to put all the world on notice with reference to its method of operation and whether it operated or not has nothing to do with this case, and we are not trying to determine the validity or operativeness of the Cooper patent. It simply would make no difference whether it was operative or not. Whether it operated or not wouldn't make any difference. We are not trying to set it aside. But I think this line of testimony is unnecessarily encumbering the record and is irrelevant and immaterial.

The COURT.—Well, this witness has elucidated these patents, and this may go as his knowledge in the premises.

(Testimony of William A. Trout.)

Mr. BAGG.—Yes; but so far as the use of the Cooper patent is concerned, or whether it ever operated or not, that wouldn't cut any figure.

The COURT.—I will allow the question.

(A recess was thereupon taken until two o'clock P. M.) [350]

AFTERNOON SESSION—2 o'clock.

The COURT.—You may proceed, Gentlemen.

Mr. BAGG.—If your Honor please, we have a witness here from out of town, and who holds a very important position, and it is necessary for him to remain away from his business as short a time as possible, and counsel have agreed that we may put him on out of order at this time.

The COURT.—Very well.

Testimony of William A. Trout, for Defendant.

WILLIAM A. TROUT, a witness called on behalf of defendant, having been first duly sworn, testified as follows:

Direct Examination.

(By Mr. BAGG.)

Q. Please state your name.

A. William A. Trout.

Q. Where do you reside?

A. No. 1917 Catalina Street, Long Beach, California.

Q. What is your business?

A. Master mechanic for the Shell Oil Company.

(Testimony of William A. Trout.)

Q. How long have you been engaged in the oil industry?

A. Fourteen years the 8th of next month.

Q. During that time have you had any experience with the building or installing of oil and gas traps or separators? A. I have.

Q. To what extent have you had experience along that line?

A. Well, I have worked on and remodeled one or two traps and have built one or two of my own invention.

Q. Do you remember the occasion of installing a trap up at Coalinga for the company you were employed by along in the year 1914?

A. I do. [351]

Q. I will ask you to state when you installed that trap, the exact date.

Mr. F. S. LYON.—May I ask the purpose of the examination?

Mr. BAGG.—I just want to fix the date prior to the time of your invention.

Mr. F. S. LYON.—This is not supposed to be a prior device, is it?

Mr. BAGG.—Yes, sir.

Mr. F. S. LYON.—We object, then, on the ground that it is not admissible under the pleadings.

Mr. BAGG.—It is for the purpose of showing the state of the prior art.

The COURT.—And only for that purpose?

Mr. BAGG.—And only for that purpose.

(Testimony of William A. Trout.)

The COURT.—Very well.

Q. (By Mr. BAGG.) Can you fix the exact date, or nearly the date?

A. The first trap was built and installed in the last two weeks in April, 1914, prior to the 2d of May, and in operation.

Q. I will ask you if you can make a drawing or sketch of that trap as it was installed at that time. A. Absolutely.

Mr. BAGG.—I have a sketch that the gentleman made in my office, but if counsel on the other side objects to my allowing the witness to use it I will have him make a sketch in the presence of the court (handing paper to counsel).

Mr. F. S. LYON.—I think you had better have the witness make his sketch. I don't think that one is a full sketch of it anyway. He may use it, or part of it, if he made it; I don't know.

Mr. BAGG.—Well, I will have him make a drawing of the trap itself.

Q. I wish you would make a drawing or sketch of that trap for the benefit of the Court. [352]

(Witness draws sketch.)

A. I think that is the essential or main points (handing paper to Court).

Q. Now, I will ask you to explain to the Court how this trap operates as you have described to the Court.

A. The gas and oil are brought in through this passage here opening into the side of the trap.

(Testimony of William A. Trout.)

Q. Better put a letter there for that so that the reporter can get it.

Mr. F. S. LYON.—Start with the numeral 2.

A. Two. (Marking.) And it is propelled around the shell of the trap by centrifugal force. Underneath this inner sleeve, whose head extends three-quarters of the way around, the gas going around with the oil rises through the opening at the top between the outer shell and the inner sleeve. Shall I mark that—

Mr. F. S. LYON.—Three.

A. (Marking.) The oil being propelled around the outer shell by centrifugal force, of its own weight falls to the bottom, carrying sand with it, and in turn, passes out through the valve in the bottom.

Q. (By the COURT.) All of the oil?

A. All of the oil and sand. The gas, rising through the opening in the top as described, passes upward through a series of baffle-plates and out through a top connection to a back-pressure valve.

Mr. F. S. LYON.—Mark that “4.”

A. (Marking.) The fluid level in the trap—shall I mark that “5”?

Mr. F. S. LYON.—Yes.

A. (Marking.) —is maintained by a float which is connected by a series of levers to a rod—

Mr. F. S. LYON.—Six.

A. (Marking.) Which, in turn, connects the bottom valve to a sliding piston in the top of the trap.

(Testimony of William A. Trout.)

Will it be necessary to go into the purposes of those— [353]

Mr. BAGG.—Yes; if you will.

A. The purpose of this connection and the cylinder and sliding piston in the top are to balance the valve so that the opening and closing of the same will not be affected by varying pressures. The rod, piston and levers are supported by a spring connected thereto on the top of the trap, and which supports the weight or which maintains tension sufficient to balance the weight of the valve, rods, levers and piston.

Q. Now, Mr. Trout, in this sketch which you have here I believe you stated that the oil came in at one side and was sent in or came in at a kind of tangent to the line or side of the outer wall of the receptacle and was whirled around by the centrifugal force, and the oil gradually flowed down the side-walls of the receptacle to the bottom, and the gas, where did that separate from the oil?

A. During its revolution around the side-walls of the trap.

Q. Inside of this—

A. Yes. The oil, being heavier, followed the outer wall by centrifugal force while the lighter gas went to the center and separated.

Q. Now, you say that trap was installed prior to May 2, 1914? A. Yes, sir.

Q. Do you know when the trap was built?

A. The trap was built after the 15th of April, 1914.

(Testimony of William A. Trout.)

Q. Where was that trap installed?

A. On Well No. 17, 2, on what at that time was known as the W. K. Oil Company, now the Shell Company of California.

Q. That was in California here?

A. In California, in the Coalinga field.

Q. Is that trap in operation yet?

A. That I couldn't say. They have been shifted around considerably, and whether that particular one is in operation or not I don't know. That is, the first one. But there have [354] been a number of them in operation.

Q. Since that time? A. Yes, sir.

Q. You installed that trap, did you?

A. I did, sir.

Q. I will ask you to state to what extent that trap was successfully operated.

A. Well, it was not a huge success on that well, owing to the fact that the well was flowing by large heads and it didn't have capacity enough to handle the sudden rushes. Its size was not great enough. We found afterwards in some places by installing two of them in a battery they would operate on that kind of a well.

Q. And did you install it on another well, or was it removed to some other well?

A. It was moved around the lease, yes. It was moved to two or three other wells.

Q. And did it operate successfully on them?

A. Yes.

(Testimony of William A. Trout.)

Q. What was the capacity of this particular well you speak of?

A. Why, it flowed—the greatest flow I remember of was 2,300 barrels a day, but it came in large heads. It would lay off for hours and *the* come in a big head, and what the rate was while it was flowing in heads we had no way of measuring.

Q. Then the only objection there was to this trap was the fact that it didn't have sufficient capacity to handle this flow of oil?

Mr. LYON.—That is objected to as leading and suggestive and incompetent.

Mr. BAGG.—Take the witness. [355]

Cross-examination.

(By Mr. F. S. LYON.)

Q. You say, Mr. Trout, you are master mechanic of the Shell Oil Company of California?

A. At Long Beach.

Q. At Long Beach? A. Yes, sir.

Q. And who do you work under there?

A. Mr. William McDuffy.

Q. You are acquainted with Mr. Lorraine, defendant in this case? A. I am.

Q. You have on your property, of the Shell Oil Company of California at Long Beach Lorraine traps, have you? A. We have.

Q. Did you know they are involved in this litigation? A. I have heard so.

Q. What pressure are those Lorraine *trap* operated under on your wells at Long Beach?

(Testimony of William A. Trout.)

Mr. BAGG.—We object to that; that is not cross-examination.

The COURT.—What is that question, what pressure?

Mr. LYON.—Yes.

The COURT.—I think that is outside of the examination in chief.

Q. (By Mr. LYON.) Where was this trap built to which you refer and of which you have made the sketch to-day?

A. It was built at the oil fields, at the Shell Company shops, or at the time it was built the California Oil Fields Limited shops.

Q. Did you build it yourself? A. We did.

Q. What was its size?

A. The dimensions of it?

Q. Yes. [356]

A. Three feet in diameter; the body was four feet long and the runs 32 inches.

Q. And you have correctly, according to your best recollection indicated the oil level that would be kept upon this trap in the sketch you have produced?

A. That varied according to conditions. It was adjustable. The oil level was adjustable.

Q. Answer the question: Is that the level you kept on it as you used it as you have indicated there?

A. Roughly so, yes; somewheres near there.

Q. Well, within what limit?

A. Oh, within a couple of feet.

(Testimony of William A. Trout.)

Q. When did you come to California?

A. 1897.

Q. And from where? A. Oregon.

Q. With what company were you in 1897 in California? A. I was not with any company.

Q. What did you do in 1897?

A. In 1897 I was going to school.

Q. And when did you finish school.

A. About 1903.

Q. And after school what did you do?

A. Went to work.

Q. For whom first?

A. Worked for John H. Blakeway in San Francisco.

Q. When did you start to work for Blakely?

A. Oh, let's see; in the fall of 1902, some time.

Q. And what time in the fall of 1902?

A. That I don't just exactly recall.

Q. What do you mean by the fall, what time of year? A. The latter three months of the year.

Q. Are you unable to tell us within three months of when you went to work for him? [357]

A. Yes. I couldn't say any closer than that.

Q. What did you do for Blakely?

A. Went to work as an apprentice.

Q. At what? A. Sheet metal work.

Q. How long did you continue with him?

A. About a year, as nearly as I can remember.

Q. You say about a year. Was it a year or nine months or longer?

A. That I cannot say exactly.

(Testimony of William A. Trout.)

Q. What time of the year did you leave him?

A. That I don't remember.

Q. You left in 1903?

A. Somewheres about that.

Q. Or was it 1904 that you left him?

A. I wouldn't be positive of the date.

Q. Who did you next work for?

A. Worked for the Tay Pipe Company.

Q. When did you go to work for the Tay Pipe Company?

A. Immediately when I left Blakeway.

Q. And where? A. San Francisco.

Q. What did you do for them?

A. Sheet metal work.

Q. How long were you with them?

A. Oh, a matter of three or four months.

Q. Was it three or four months?

A. I couldn't say positively.

Q. You left at the end of that time? A. Yes.

Q. Where did you go to work next?

A. I cannot tell you the name of the next shop I have worked at; I have forgotten.

Q. You don't know how long you worked there?
[358]

A. Yes. I worked four or five months or some such a matter.

Q. For whom did you work after that?

A. Worked for John Lawson & Sons.

Q. That was in your next employment?

A. Yes.

(Testimony of William A. Trout.)

Q. When was it you went to work for John Lawson & Sons? A. I don't recall the year.

Q. You don't recall the year? A. No.

Q. How long did you work for them?

A. A year or some such a matter.

Q. Was it one year or two?

A. I think a year, or possibly less.

Q. Was it more or less than a year?

A. That I couldn't say.

Q. Who did you work for next?

A. Taylor & Pritchard.

Q. Where? A. San Francisco.

Q. When did you go to work for them?

A. Immediately after I left Lawson's.

Q. Are you unable to give the date?

A. I couldn't give you the dates, no.

Q. Nor the year? A. Huh?

Q. Nor the year?

A. What year? I couldn't say.

Q. How long did you work for Taylor & Pritchard?

A. I worked for them about three or four months.

Q. Doing what, sheet metal work there?

A. Yes.

Q. After you left Taylor & Pritchard what did you next do?

A. Went to work for the Pacific Blower & Heating Company.

Q. At San Francisco? [359] A. Yes.

(Testimony of William A. Trout.)

Q. What year did you go to work for that company? A. I think the spring of 1905.

Q. You say the spring of 1905. Are you able to fix the date any nearer than that?

A. No. That is about as near as I could fix it.

Q. Did you ever set any gas trap? Did you build the one you say this sketch is like?

A. Yes, sir.

Q. What trap? A. McLaughlin trap.

Q. Any other?

A. The one we call the Daubenspeck trap.

Q. Any other? A. No.

Q. What were you doing in the year 1911?

A. In 1911 I was working for the California Oil Fields, Limited; I was foreman of their tank department.

Q. (By Mr. BAGG.) You say you were foreman of their tank department? A. Yes, sir.

Q. (By Mr. LYON.) Have you any record with you showing the date upon which this alleged first trap was made? A. I have a note in my book.

Q. A note what? A. A note in my note-book.

Q. Have you any original drawings of anything to show its construction? A. I have not.

Q. The trap you have illustrated in this sketch that you have made, has it any name?

A. Well, it has been called the Durward gas trap.

Q. Was it ever patented?

A. It was not. [360]

Q. Where did it get the name of Durward?

A. Mr. Durward was superintendent of the prop-

(Testimony of William A. Trout.)

erty soon after we started building them and he had drawings made at one time and attached his name thereto.

A. As a matter of fact, when were the drawings made?

A. I think the drawings were made in 1915 some time.

Q. Where are those drawings?

A. That I couldn't say; there are some of them in existence at the Shell Company's property at Coalinga, I believe.

Q. Where is Mr. Durward?

A. He is still there.

Q. As a matter of fact, Mr. Trout, on that property prior to building this trap you had a Trumble gas trap, didn't you? A. No, sir, I did not.

Q. Had not seen one around in that field at all?

A. Never did.

Q. How long after that was it you first had a Trumble gas trap?

A. It was some months afterwards; after we had set up our trap, experimented with it considerably and taken it off the well and the first Trumble trap was put on the same well.

Q. And put in the place of this trap, wasn't it?

A. Exactly.

Mr. LYON.—That is all.

Redirect Examination.

(By Mr. BAGG.)

Q. The Trumble trap, what kind of luck did you have with that?

(Testimony of William A. Trout.)

A. Well, it sanded up the same as the other trap had.

Q. You had the same trouble that you did with the other one?

Mr. LYON.—We object to that as leading and suggestive.

The COURT.—Did you have trouble with that trap? [361]

A. Not a great deal. We had some trouble. The first time we put it on it sanded up. The trap, though, stayed there for quite a long while in operation.

Q. (By Mr. BAGG.) Did this trap ever go out by reason of the sand striking against the side walls of the receiving chamber?

Mr. LYON.—We object to that as leading and suggestive and not redirect examination.

The COURT.—He may answer the question.

Q. (By Mr. BAGG.) Did it?

A. Which trap do you refer to?

Q. This trap you have drawn there.

A. No, sir.

Mr. BAGG.—That is all.

Mr. LYON.—That is all. I will ask that the witness remain in attendance.

The COURT.—Very well. You will remain here.

Mr. BAGG.—If your Honor please, would like to introduce this drawing which the witness has made.

The COURT.—Very well.

The CLERK.—Exhibit "K." [362]

**Testimony of L. L. Mack, for Defendant (Recalled
—Cross-examination).**

L. L. MACK, recalled.

Cross-examination.

(By Mr. F. S. LYON.)

Q. Referring, Mr. Mack, to Defendant's Exhibit "G," the Barker patent No. 927476. Where did you say the oil and gas entered from the well into this trap?

A. Through the pipes 4, 5 and 6. That is the sections 4, 5 and 6 and at the opposite section.

Q. Then the action would be to simply allow the oil to drop down into a body which lies at the bottom of the trap, would it?

A. No. I wouldn't say that. There is a sprayer on top marked 7 here which would spray the oil out latterly from the nozzle there or outlet so that it would spray out and fall down in a shower if at all, which probably would have deflected it towards the sides of the wall probably similar to the trap down the side there and similar to a drop down by gravity into the body into the interior.

Q. And the entrained gas if it was escaping from such oil as the oil fell down would be apt to pass out from the body or descending oil?

A. There would be no body of descending oil. There would be a spray and the gas would be liberated from that spray as it was broken up. That is the object of part 7, to break up from a volume into a stream or spray so as to liberate the gas from the oil.

(Testimony of L. L. Mack.)

Q. With this heavy crude oil do you believe such a sprayer would efficiently break the oil into a spray?

A. I believe it would have a tendency to; I believe it would do it more or less, depending to its extent, depending on the weight of the oil and its gravity and a few other things.

Q. Would an 18 or 20 gravity crude oil which is forced [363] against what you have called sprayer 7 break the oil into a spray?

A. I believe it would; yes.

Q. That is your idea?

A. That is my opinion. I cannot specifically state as to any particular gravity of oil, but that is the best of my opinion, that it would.

Q. The action of this spray in this Barker patent would be to a greater extent than in your opinion comparable to the disclosure of the gas and oil in this patent of McIntosh, Defendant's Exhibit "E," would it?

A. It would be somewhat similar except I believe it would break up in that case, in the case of the device of Barker to an even greater extent than it would here under certain conditions. The object of the character of this outlet being partially disclosed is the same as the outlet of Barker except Barker has a top over the outlet which would tend to spray it more towards the sides.

Q. Referring to the Brea patent, 1,014,943, Defendant's Exhibit "H," did you say it was your un-

(Testimony of L. L. Mack.)

derstanding that the members, 1, 11, 12 and 13 were imperforate holes?

A. They are perforated cones, yes.

Q. I think also—

A. Well, I perhaps use that wrongly. I meant to say a perforated cone, at least they had perforations in them. I think I did say imperforate when I should not have said it.

Q. As a matter of fact, the description of this device as contained in the patent is a cylindrical casing which is perforated with a series of brackets forming, a number of said brackets at different levels a support and are screens 11, 12 and 13, the latter screen having three openings shown within the lower spray, is that correct?

A. Well, I cannot tell much of the size of the openings.

Q. They are described as screens instead of imperforated cones? [364]

A. They are described as screens, but they are perforated cones.

Q. Also screens?

A. They are perforated cones. I wouldn't say they were screens at all.

Q. From a practical standpoint you are unable to state how long it would take such screens to fill up with the sand that is contained in the oil, are you?

A. No, I would not be able to say. That would depend entirely on the size of those openings, the perforations, and the number of them, and the relative area of the inlet pipe and the total area of all

(Testimony of L. L. Mack.)

the perforations, as to how long one would fill up or bank up on the top of the cone.

Q. Have you any personal knowledge as to whether the device was ever built or used in accordance with this Brea patent? A. I do not.

Mr. BAGG.—We object to that as incompetent, irrelevant and immaterial; it does not tend to prove—

The COURT.—I think that is immaterial.

Mr. LYON.—Testing his knowledge in regard to each one of those.

The COURT.—What is that?

Mr. LYON.—The question is material whether or not he knows of any of them having been used, goes to the question of how much he knows about the device, if he never had seen it.

The COURT.—You may proceed then.

Mr. LYON.—I want to show, if he knows, what he has seen of this device.

Mr. BAGG.—All he has ever qualified to being is a patent draftsman and having had a large experience in drawing specifications and claims and drawing and making patent drawings that he could understand that operation of them. That is all.

The COURT.—If he knew their use it would be some evidence. That would go to his knowledge.
[365]

Mr. LYON.—That is all.

Testimony of A. A. Wharff, for Defendant.

A. A. WHARFF, a witness called on behalf of the defendant, being first duly sworn, testified as follows:

The CLERK.—State your name, please.

A. A. A. Wharff.

Direct Examination.

(By Mr. BAGG.)

Q. Where do you live, Mr. Wharff?

A. Route 3, Anaheim.

Q. What is your age? A. Fifty-two.

Q. What business are you engaged in at the present time? A. Superintendent of production.

Q. For what oil company?

A. Merchants Oil Company.

Q. Where is the Merchants Oil Company located?

A. Richfield.

Q. How long have you been employed by the Merchants Oil Company?

A. Since the first of the month.

Q. Since the first of March? A. March.

Q. Where did you reside before you came to California?

A. Near Santa Maria—or before I came to California—in Illinois.

Q. How long have you been engaged in the oil industry? A. Since 1892.

Q. During that time what experience if any have you had with oil wells and oil production and oil and gas separators?

(Testimony of A. A. Wharff.)

A. Well, I have always been with the production end of the business, producing oil. [366]

Q. That is ever since 1892? A. Yes, sir.

Q. Prior to November 14th, 1914, had you ever superintended or been connected with the construction of any oil and gas separator?

Mr. F. S. LYON.—We object to that as leading and suggestive. All testimony, your Honor, in regard to oil use which is merely verbal is to be scrutinized very carefully and it certainly is very necessary that the critical date should not be put before the witness.

The COURT.—This is merely preliminary.

Mr. BAGG.—Yes, sir, that is all it is.

The COURT.—I will allow the question.

Mr. LYON.—You do not intend by this witness to prove any prior use or attempt to, anything that is prior? Because it certainly is absolutely essential that the proof as to dates, if he relies on anything that is prior, he should not allowed to say to the witness that it is prior to a certain date.

Mr. BAGG.—I am simply asking the witness the time prior to the date of their patent and then I will fix the date.

Mr. LYON.—That is exactly the ground of our objection, dates prior to our dates.

The COURT.—If the witness can give his date independently, let him do it.

Mr. BAGG.—Will you read the question, Mr. Stenographer?

(Question read.)

(Testimony of A. A. Wharff.)

A. Yes, we used them.

Q. (By Mr. BAGG.) Just answer the question yes or no. A. Yes, sir.

Q. Now then, will you state to the Court as nearly as you can, giving the dates as nearly as you can and the description of any oil and gas trap or separator that you were connected with or had reason to observe or was instrumental in constructing.

Mr. LYON.—That is purely for the purpose of showing the state of the art. [367]

Mr. BAGG.—Yes, sir.

A. We built some traps in Ohio.

Q. In what year?

A. I think something like 1893 or 1894.

Q. Now, I will ask you to describe to the Court if you can the character of those traps or their method of construction. If you wish to, you can draw it.

(Witness drawing.) The oil entering here.

The COURT.—Speak up louder.

A. The oil entering the pipe here and carrying that line on around.

Q. (By Mr. BAGG.) Mark that A or 1.

Mr. F. S. LYON.—He has marked it “inlet.”

Q. (By Mr. BAGG.) All right.

A. The oil would enter here and pass down, well, anywhere from there to there, the four feet, some places we would use them probably four and maybe a little longer, maybe four feet, and throw it against the side of the trap. That trap we built there out of 9 or 10 inch casing—I disremember which—and

(Testimony of A. A. Wharff.)

the oil would flow against the side of the trap, sometimes we had on a 45 degree turn here, and sometimes an ell, which would be at right angles, and then the gas would pass out here. We used the gas in the boilers and there was some pressure on the gas lines all the time. The oil outlet was from the bottom of the trap here clear out and then out, in order to carry this flow of oil, making a level somewheres near level here in the trap, of the oil.

The COURT.—You used no float whatever in that trap?

A. No float whatever in that trap, no, sir.

Q. (By Mr. BAGG.) This trap was constructed you say, about when?

A. In 1893 or 1894, something like that.

Q. Now, suppose you had more than one well that you wanted to connect with that trap, I will ask you to state to the [368] Court how you did that.

Mr. F. S. LYON.—I object to that on the ground it is hypothetical.

The COURT.—How can that be material?

Mr. BAGG.—It would simply show that each well was constructed with an inlet just exactly like that one and sometimes they had three of those sprays, one in each well.

The COURT.—You may answer the question.

Q. (By Mr. BAGG.) Go on and answer the question.

A. By using a cap of three or four openings on the top—they were mostly pumping wells, and we could

(Testimony of A. A. Wharff.)

pump around and we aimed to put the oil from each well separate.

The COURT.—You mean each well would be thrown in there?

A. Yes, it would be the same condition as the first one, with the exception—

Q. (By Mr. BAGG.) Will you indicate how that would be constructed with another inlet with another well just on that drawing?

A. Well, yes, I could. The cap on this head was screwed on here, that opens say three—we often had them bored as many as we wished, as many as we could get connected in a ten-inch sap and they would be put just the same as that.

Mr. BAGG.—Now, if your Honor please, we would like to introduce this drawing which the witness has made and have it marked Defendant's Exhibit.

The CLERK.—“L.”

Q. (By Mr. BAGG.) What oil companies have you been employed by?

A. Well, I was with the Caldwell Oil Company near Maxburg, Ohio, something like five years—the exact date I couldn't tell you—and I think after I left them I worked for Murphy, Shaw & Duffy, it was in the same field near Maxburg, Ohio; their offices were in Washington; from there I went to Jettys, Cullen & Dryer, near Lowell, Ohio, and I was with them a number of years. The property was sold to another company and I was with them and they transferred me to Illinois—I think it was June, [369] 1906. That was Bruner-Stewart &

(Testimony of A. A. Wharff.)

Company, Bruner, Brown & Hoag, and Jennings Brothers & Company under one head.

Q. How long were you with them?

A. I think right around four years, and maybe something like five years, possibly—the exact length of time I couldn't tell you.

Q. Since coming to California what oil companies have you been connected with?

A. I worked I think seven days for the Starey Oil Company, up near Schooley, in Ventura County, that was in 1910, November I think, and from there I went to the Santa Maria fields with the Union Oil Company.

Q. How long were you with them?

A. Ten years, seven months and one day last June, the 30th.

Mr. BAGG.—That is all. Take the witness.

Cross-examination

(By Mr. F. S. LYON.)

Q. Mr. Wharff, I judge according to your recollection that this early trap you think was in 1903 or 1904 was made out of 9 inch casing?

A. 9 or 10 inch.

Q. In other words, by casing you mean the pipe that is used in the oil fields? A. Yes, sir.

Q. It was simply made of a piece of pipe in which entered the oil and gas?

A. Yes. Sometimes we put up two and three joints of it alongside the rig.

Mr. LYON.—That is all.

Mr. BAGG.—That is all. [370]

Testimony of W. H. Swoap, for Defendant.

Mr. W. H. SWOAP, a witness called in behalf of the defendant, being first duly sworn, testified as follows:

The CLERK.—What is your name?

A. W. H. Swoap.

Direct Examination.

(By Mr. BAGG.)

Q. State your age and residence.

A. My age is 54, my residence, 135 South Walnut Street, Brea, California.

Q. What is your occupation?

A. I am what is called as an oil well warker; I have worked in practically all branches of the business with the exception of refining; I never was in the refining department.

Q. How long have you been connected with the oil industry? A. Since 1887.

Q. During the time you have been engaged in the oil industry, have you had occasion to examine the construction of any oil and gas separators?

A. Yes; a few, not many.

Q. When was that?

Mr. F. S. LYON.—That is for the purpose of showing a prior state of the art only?

Mr. BAGG.—Yes.

A. The first one was in 1897, in Pennsylvania.

Q. (By Mr. BAGG.) Can you draw a sketch of the arrangement?

(Testimony of W. H. Swoap.)

A. I am no draftsman, but I will make a sketch that will be imperfect.

Q. I wish you would draw a sketch as nearly as you can of the arrangement. [371]

A. (Witness drawing.) This was a drum built out of a boiler iron; it was constructed by the company that owned the lease; I don't know as it was ever patented or any attempt made to ever get a patent on it. The oil came in here like this, it was thrown against the side of the wall, ran down on the side of the steel, as far as I know anything about it, because it was impossible to see in there at the time the oil was going in; there was a manhole plate right in on this side of the top. The gas came up and left here; there was a safety valve on the top with a weight on to make a certain pressure on there and also to keep it from blowing up, because the wells that were in there were flowing wells and they were small, approximately five-barrel wells of paraffine base oil, very light oil, and these wells were flowing wells and had to be shut. What I mean by that, they were shut off the greater portion of the 24 hours, open in the morning and left flowing for four or five hours and then shut back and not let flow until the next day, and when the well was opened it exerted a great pressure coming in there and the gas left through this point here and there was a back pressure valve on the line on the ground. The only reason that these traps were installed at that time was to preserve the gas for use, because the extraction of gasoline from fuel oil at that time was only just in its infancy and the gas was not being used for that

(Testimony of W. H. Swoap.)

purpose in that section of the country at all, it was simply to preserve it and carry it out to the boilers to use for fuel.

Mr. BAGG.—I would like to introduce this drawing in evidence.

A. I did not explain how the oil come out there.

Q. Very well.

A. The outlet for the oil was in the bottom. There was no automatic control below there, it was simply what we called a stop cock. The capacity of the tank was enough to hold the production of the well for the entire day and in the evening before we left for home we would go and open this valve and the pressure that was on the tank would force the oil into the stock tank which was over here and as soon as the oil was out we could close that valve.
[372]

Mr. BAGG.—I would like to introduce this in evidence and mark it Defendant's Exhibit "M."

Q. What company are you connected with at the present time?

A. General Petroleum Corporation.

Q. Where? A. The Tonner tract.

Q. Do you know anything about this oil, or Lorraine separator that has been installed on tract No. 3 on the Tonner Tract?

A. You mean well No. 3?

Q. Well No. 3 at the Tonner tract?

A. Yes, sir. I was taking care of that well when

(Testimony of W. H. Swoap.)

it was installed there and I am taking care of it still.

The COURT.—What separator was that, Lorraine?

Mr. BAGG.—That is the Lorraine separator installed on the Tonner tract, well No. 3. I wish you would state to the Court the history of this trap so far as the pressure on the same goes.

A. Well, the gas from the well was being taken to an absorption plant to absorb gasoline out of it there, from a three-inch line. This same line conducted the gas from the other three wells, the whole four wells through the one line went through it. At the absorption plant it is necessary to maintain certain pressures to put it through the absorbers. The absorbers are high standpipes from 20 to 24 inches, I should judge, throughout, and the gas comes in at the bottom and goes out through the top and then it comes down through it and there is a series of trays to break the oil up as it comes down and that absorbs the gasoline out of the gas and then the oil goes through a compressor plant that puts it to a pressure of 120 pounds, something like that, to deliver it in the Southern Counties gas mains for fuel. They need to have two compressors at the absorption plant to transfer this gas from the absorbers it is necessary to have pressure enough that it will go that route [373] and they were carrying about 45 pounds. This particular well, No. 3, didn't have as much gas according to the amount of oil as some of the other wells handled and putting on that much

(Testimony of W. H. Swoap.)

pressure on the well tended to retard the flow so much that it stopped flowing for two or three nights, so the Los Angeles foreman notified the superintendent of the absorption plant that he would have to fix it and reduce the flow therefrom or they would turn the gas out into the atmosphere. The fact of the matter is the well stopped flowing and when I was on the job I turned the gas out and let it go for several hours in order to get it started again. So in order to overcome that they laid a four-inch line from the absorption plant and put it into a main of their own line, a four-inch line in diameter to reduce the pressure and they put it through one of the absorbers on which there were five, put it into one of them alone and let the gas escape immediately into the air and not absorb it instead of putting it down into the pressure tank they let it directly into the air and that is the way it is done now, and as soon as that was done that lowered the pressure on the discharge gas line so that there is not any pressure shown on the gauge. There is no doubt a slight pressure but the gauge does not record it.

Q. That slight pressure is due to what?

A. That slight pressure is due to the line friction, I would say.

Mr. BAGG.—That is all.

Cross-examination.

(By Mr. F. S. LYON.)

Q. Then if I understand your testimony correctly, Mr. Swoap, the gas pressure on oil wells,

(Testimony of W. H. Swoap.)

we may say, after they have been producing a while ordinarily fades away, doesn't it?

A. Well, some do and some does not. Now, the No. 1 Tonner well is making almost as much gas to-day as it was the day it came in. This No. 3 well, however, did fade some. [374]

Q. And that is true generally of all oil wells according to the particular circumstances. They maintain their pressure but the pressure does fade away and you have to eventually go to pumping to get the oil, is that so? A. Yes, sir.

Q. You are using a gas trap you could not use a greater pressure of gas upon it than you have got anyway, I mean pressure from the well?

A. No; unless you had some means of pumping it through.

Testimony of William G. Lacy, for Defendant (Recalled).

WILLIAM G. LACY, recalled.

Direct Examination.

(By Mr. BAGG.)

Q. What is your name?

A. William G. Lacy.

Q. And are you connected with the Lacy Manufacturing Company?

A. I am employed by them; yes.

Q. Have you a letter from Mr. F. M. Townsend dated June 14, 1921?

A. I have here, I believe.

(Testimony of William G. Lacy.)

Q. Is this letter which I hand you the original letter which you received or the Lacy Manufacturing Company received from Mr. F. M. Townsend?

Mr. F. S. LYON.—We are willing to admit that. I don't know that this witness knows it. If he shows us the letter. (Examining same.) That is Mr. Townsend's original letter on that date, that we will admit.

Mr. BAGG.—We wish to have this marked Defendant's Exhibit "N."

Mr. F. S. LYON.—That is the reply to it.

Q. (By Mr. BAGG.) No. I wish you would examine this paper which I hand you and state what it is.

A. That is the reply to Mr. Townsend's letter of June 14. [375]

Q. (By Mr. L. S. LYON.) Did you sign this letter?

A. No; that was signed by William Lacy, President, of the Lacy Manufacturing Company.

Q. I thought that your name—that you said your name was William Lacy?

A. I said my name was William G. Lacy.

Q. You appeared in response to a subpoena for William Lacy, President of the Company, did you not?

A. The subpoena was served upon me and I responded to it.

Q. (By Mr. BAGG.) Are you acquainted with the signature of—

Mr. F. S. LYON.—We are willing to stipulate

(Testimony of William G. Lacy.)

that is Mr. William Lacy's signature, as President of the Lacy Manufacturing Company. I am willing to save you the proof on that.

Mr. BAGG.—All right. Now, we wish to introduce this in evidence and have it marked as Defendant's Exhibit.

The CLERK.—Defendant's Exhibit "O."

Mr. F. S. LYON.—And it will be stipulated in regard to the other letter of the Lacy Manufacturing Company also in evidence.

Q. (By Mr. BAGG.) After you received the letter which was introduced the other day by the plaintiff in this case under date of December 20, 1920, what, if anything, did you or your company do with reference to investigating the Trumble oil and gas separator?

Mr. LYON.—We object to that until the witness has shown he has some personal knowledge.

Mr. BAGG.—I don't know that this Mr. Lacy did anything, and I would like to have the foundation laid.

Q. (By Mr. BAGG.) If you know what, if anything, was done.

A. I don't know that the company investigated—

Q. Did you take part in any of those investigations?

A. I was present when those investigations were made, I recollect.

Q. At the company's office? [376]

A. Lacy Manufacturing Company's office.

(Testimony of William G. Lacy.)

Q. Read the question, Mr. Stenographer.

(Question read.)

Q. Answer the question; what did you do?

A. We secured an opinion from a patent attorney by the name of Keene, a written opinion.

Q. I will ask you to examine this letter which I hand you, and state whether or not that is the original letter which you received from Mr. Keene?

Mr. F. S. LYON.—That is objected to as immaterial.

The COURT.—Well, it might be.

Mr. BAGG.—We would like to show they acted in good faith and on the advice of counsel.

(Discussion.)

Mr. F. S. LYON.—Now, the advice of counsel would not be competent, and cannot be introduced here at all.

Mr. BAGG.—I think it would be most competent, because it would show with the advice of counsel there that the Lorraine patent did infringe on the Townsend patent, and it would be a strong building up of their case.

The COURT.—But his evidence would not be competent.

Mr. BAGG.—And we will ask to have introduced the written opinion sent by him.

The COURT.—That could not be evidence of the fact and it could not be evidence of the advice itself.

(Discussion.)

The COURT.—I think the letter can go in for that one purpose, and that is to show that Mr. Lacy

exercised due care in the construction of this patent to see that he was not infringing.

Mr. BAGG.—Yes, sir.

The COURT.—It can be put in for that purpose only.

Mr. BAGG.—That is our purpose.

Mr. LYON.—May I see the letter? (Examining same.) I am willing to permit you to use this to show that you acted under it [377] but I object to it more, your Honor, because I don't know the alleged writer of it and I don't know if he is even a lawyer. As a matter of fact, I never have heard of him, and consequently know nothing as to whether this is the advice of an attorney at law. There should be some proof of it, and not allow it to go in, that they acted on that advice. If they want to prove merely that it was the advice of a lawyer—

The COURT.—The witness has already stated he took the advice of a lawyer, and I presume the man that wrote this letter is a lawyer.

Mr. BAGG.—Under the laws of this state it would be extremely dangerous for him to have a letter-head of a lawyer and he not being entitled to practice in this state.

Mr. F. S. LYON.—I notice this doesn't say "Attorney at Law" on it, and while—

The COURT.—Who was the party?

Mr. F. S. LYON.—Dr. W. P. Keene, I never heard of him myself before. I wouldn't make this objection if I didn't think the man was not admitted to practice.

(Testimony of William G. Lacy.)

The COURT.—And not a member of the bar of this state?

Mr. F. S. LYON.—Not that I know of, and that is the reason I make this objection.

Q. You don't know whether he is a member of the bar or not, do you? A. I couldn't say.

Mr. F. S. LYON.—I know there are men here who are practicing and have the words "Law Offices" and so forth on their doors, and yet they are not members of the bar. Now, I don't want to go any further with that proposition than that, except we know they are giving advice—

The COURT.—Do you know about this, Mr. Bagg?

Mr. BAGG.—No. This happened before my connection with this case, and all I know is that we have such a letter, and I understood Mr. Keene was a patent attorney and reasonably well known. [378] That is all I know of him. I never met the gentleman myself.

The COURT.—Well, we will let it go in on the line I have suggested.

(Defendant's Exhibit "P.")

Mr. BAGG.—That is all.

Cross-examination.

(By Mr. LYON.)

Q. Mr. Lacy, is this a true reproduction of one of the Lorraine gas traps manufactured by your company showing the exterior valve mechanism and arm (exhibiting)?

(Testimony of William G. Lacy.)

A. Yes, I believe that was made from a photograph of one of the earlier traps.

Mr. F. S. LYON.—We will ask that it be received in evidence as Plaintiff's Exhibit 21, simply to show your Honor what we attempted to illustrate to you last Friday.

The COURT.—Very well.

(Plaintiff's Exhibit No. 21.)

Mr. F. S. LYON.—It only shows that one link arm there, and it shows the inlet at the top, at this particular well. We do not assert that this is the one that is in the courtroom.

Mr. BAGG.—I will ask Mr. Prout to take the stand. [379]

Testimony of George H. Prout, for Defendant.

GEORGE H. PROUT, called as a witness on behalf of the defendant, having been duly sworn, testified as follows:

Direct Examination.

(By Mr. BAGG.)

Q. Please state your name, age and residence.

A. Thirty-seven years of age; residence, No. 2655 North Sitchel, Los Angeles.

Q. What business are you engaged in?

A. Machinist.

Q. Where are you employed?

A. The Lacy Machine Company.

Q. What connection have you with the manufacture or construction of Lorraine gas and oil separators?

(Testimony of George H. Prout.)

A. I assembled practically all the gas separators that have been made by the Lacy Manufacturing Company in the last year.

Q. Are you familiar, then, with the interior mechanism and construction of these traps?

A. Yes, sir.

Q. I will ask you to state if there has been any other oil and gas separator put out by the Lacy Manufacturing Company for Mr. Lorraine which is like the model part of which stands up there against the wall, and the whole of which was originally sold to the General Petroleum Company on the 17th day of March this year.

Mr. F. S. LYON.—That is objected to as leading and suggestive, and as calling for a conclusion of the witness, and not the best evidence. The witness can detail the construction of it, but—

Mr. BAGG.—I am asking him whether he is familiar with that.

Mr. F. S. LYON.—No; this question is whether there was any [380] other one like this one.

(Question read.)

Mr. BAGG.—I will change that question to read:

Q. Has the Lacy Manufacturing Company turned out any other traps of the same model as the trap sold to the General Petroleum Company on March 17th, 1922? A. Yes.

Mr. LYON.—Same objection to that. I think if counsel wishes to he could ask the witness wherein any of these differed or was similar to this trap and let him state.

(Testimony of George H. Prout.)

The COURT.—I think I will allow the question. What was the answer? A. Yes, sir.

Q. (By Mr. BAGG.) Have you examined this part of the trap? A. No, sir.

Q. I wish you would examine the same, and particularly the elbow on the interior of the trap leading from the oil and gas inlet.

A. (Examining.) I never built that trap.

Q. Now, I will ask you to state wherein the other traps that you have superintended the construction of, and of this particular model, differ from this trap which you have just examined?

A. The ones that I have superintended and constructed, I always had clearance between the L—I had the L set equally spaced between the shell and the baffle-plate, and I see that L is set away over to the baffle-plate.

Q. Did you observe the edge of this elbow in this particular trap just now? A. Yes, sir.

Q. I will ask you to state wherein that differs from the elbow that you have put into these various traps you have testified to.

A. I see that one there has been chipped off or ground off the back to go up against the baffle-plate. [381]

Q. I will ask you to state if you know whether or not that is the only trap put out in that shape.

A. Yes, sir.

Mr. F. S. LYON.—We object to that.

The COURT.—I don't know whether he knows

(Testimony of George H. Prout.)

or not. He said he had nothing to do with the construction of this trap.

Mr. BAGG.—He says he didn't put this one out, but I asked him if he knows whether there were any traps put out.

(Question read.)

A. That is the only one to my knowledge, and I didn't know that was out.

Mr. BAGG.—That is all.

Cross-examination.

(By Mr. F. S. LYON.)

Q. Mr. Prout, what is your position with the Lacy Manufacturing Company?

A. Machinist.

Q. Do you work under a foreman?

A. Yes, sir.

Q. And a superintendent

A. I am not a superintendent.

Q. I say, and there is a superintendent of your department? A. Yes, sir.

Q. You say you have worked on the assembly of practically all the Lorraine traps made at the Lacy Manufacturing Company?

A. That is in the last year.

Q. They have working drawings for those traps, have they?

A. No, sir. I worked there nine months before I ever saw a drawing of—

Q. You worked under the instructions of your foreman? A. Yes, sir.

(Testimony of George H. Prout.)

Q. And you don't know what drawings he has, then? A. No. [382]

Q. You say you worked nine months before you saw a drawing of it. Then you have seen one recently? A. Yes, sir; one assembled drawing.

Mr. F. S. LYON.—That is all.

Q. (By Mr. BAGG.) Do you know, Mr. Prout, how much space there is between the baffle-plate and the edge of this elbow in the traps you have been putting out?

A. Half an inch. The reason I know that is that the L measures $9\frac{1}{2}$ inches over all, and between the shell and the baffle is $10\frac{1}{2}$ inches, and when I set the pipe to be welded I measured down just to 10 inches to the edge of my L and have my welder stick out to the baffle.

Mr. BAGGS.—That is all.

(Five minutes recess.) [383]

Testimony of Robert W. Smith, for Defendant.

ROBERT W. SMITH, a witness called in behalf of the defendant, having been first duly sworn, testified as follows:

Direct Examination.

(By Mr. BAGG.)

Q. Please state your name, age, residence and occupation or profession.

A. I am 27; I live at No. 910 $\frac{1}{2}$ South Hope Street, Los Angeles, and I am a patent solicitor.

(Testimony of Robert W. Smith.)

Q. How long have you been a patent solicitor or been engaged in the business of soliciting patents?

A. Since 1912.

Q. About ten years? A. Yes.

Q. What firms have you been associated or connected with in that line of work?

A. Back in Washington in 1912 when I started in that business I was first with Vernon E. Hodges; then I was with Munn & Company; then I went to Cincinnati in 1916 with A. F. Herbsleb. That was in 1916. After the war I went back to Washington and was with Hubert E. Peck, and after I came to Los Angeles I was with Hazard & Miller, and then opened my own office.

Q. You are now engaged in a private practice of your own? A. I have my own office.

Q. During that time have you had any occasion to prepare drawings for various devices that have been patented?

A. I made some of my own drawings.

Q. Do you prepare specifications. A. Yes.

Q. For patents?

A. That had been the major part of my business throughout that entire period.

Q. Have you ever prepared a specification or an application [384] for a Mr. Lorraine?

Mr. F. S. LYON.—We object to that as incompetent, irrelevant and immaterial for any purpose in this case. If the object is to prove any application of Mr. Lorraine the proper procedure is to produce a certified copy of it from the Patent Office,

(Testimony of Robert W. Smith.)

and there is no application that is material in evidence.

Mr. BAGG.—This is just simply preliminary, your Honor, to show that he is familiar with this class of work, that is all.

The COURT.—You might leave that part of it out, then, as to whether he has prepared a specification or application from Mr. Lorraine.

Mr. BAGG.—Very well.

Q. Have you had occasion to prepare any specifications for any instrument or devices connected with the separation of other treatment of oil and gas as they come from oil and gas wells? A. I have.

Q. I hand you Defendant's Exhibit "E," which is a certified copy of the patent granted by the United States to George L. McIntosh, Assignor, under date of March 11, 1913, and will ask you to describe as nearly as you can the action of that device (handing paper to witness).

Mr. F. S. LYON.—If your Honor please, we object on the ground that it is incompetent, no foundation laid, the witness not having qualified to answer the question; and on the further ground that the documents speak for themselves. If they are part of the prior art they must be sufficiently plain, clear and exact to enable one skilled in the art to make and use a device embodying the invention. If your Honor has any question as to the competency of the witness in this connection, I would like to examine him as to his qualifications before he gives his testimony.

(Testimony of Robert W. Smith.)

Mr. *L. F. LYON*.—We would like to make the further objection that these are the same patents that have been gone over by the other expert witness, and, as I understand the rule in this district in regard to experting prior art patents, the Court [385] limits the parties to one expert to describe the same patent.

The COURT.—Is that the rule in this court?

Mr. BAGG.—I am not familiar with that rule, your Honor. I think it is purely within the discretion of the Court.

Mr. *L. S. LYON*.—I think it is, but in all the cases I have been in the Court has refused to sit and listen to the testimony of two experts for the same patent, to see what is in the same patent.

The COURT.—Is this all the experts you have now?

Mr. BAGG.—Yes, that is all.

The COURT.—I will hear him.

Mr. *F. S. LYON*.—What about the cross-examination with regard to qualifications, your Honor?

The COURT.—Do you want to cross-examine him as to whether he is an expert or not?

Mr. *F. S. LYON*.—Yes.

The COURT.—All right.

Mr. BAGG.—No objection.

Q. (By Mr. *LYON*.) You are not admitted as an attorney at law, are you? A. In California?

Q. Yes.

A. No, I don't practice in the state courts.

Q. Are you a graduate engineer from any school?

(Testimony of Robert W. Smith.)

A. No, sir.

Q. In other words, all the mechanical training you have is such as you have picked up while working in the patent attorneys' offices, and you simply have been admitted to practice before the Patent Office as a drawer and amender of scribner of application for patents; is that correct?

A. I am a member of the bar of the District of Columbia, of the Federal Courts in the District of Columbia. I have not yet been admitted in California. As to my education, as I say I am not a graduate of a higher school technically, but my [386] technical education is confined to high school education in technical lines.

Q. Did you ever have any practical experience in any department of oil production or oil well drilling or operation? A. Have I had—

Q. Yes, any actual experience in any of those lines. A. No, sir.

Q. (By the COURT.) Do you claim to be a patent expert? A. Yes, sir.

Mr. F. S. LYON.—That is all.

The COURT.—Very well. Go ahead.

Q. (By Mr. BAGG.) Proceed and answer the question.

A. This patent granted in 1913 has an outer receptacle, an oil and gas inlet—

Q. (By the COURT.) Well, all I want to know is the operation of the oil as it enters the trap.

A. The oil and gas outlet has baffle-plates arranged beneath it so that the oil and gas as it en-

(Testimony of Robert W. Smith.)

ters will fall down on these baffle-plates and the action of the baffle-plates will be to shower the oil and gas outwardly so that the oil will drop to the bottom of the receptacle, some of it dropping directly and some of it being showered down the wall of the receptacle, the gas rising to the top and passing out through the gas outlet at the top.

The COURT.—Is that all?

Mr. BAGG.—That is all I want with this witness, on this particular patent.

The COURT.—What cross-examination have you?

Mr. F. S. LYON.—None on that at the present time.

Mr. BAGG.—Well, we will introduce them all at this time, if your Honor please.

Q. I hand you Defendant's Exhibit "J," which is a certified copy of the patent granted to Albert T. Newman, and ask you to explain to the Court the action of that.

A. In this there are two receptacles, the oil and gas [387] entering through this tee head so that they go into the two receptacles, in one case falling upon the baffle "K-prime" and in the other case upon the baffle "L-prime." The oil and gas will then be diverted to the side walls of the reception chambers so that the oil will fall to the bottom of the receptacle, the gas rising, and in the course of that oil and gas falling downwardly the oil and gas will pass off the baffles and flow down-

(Testimony of Robert W. Smith.)

wardly in a thin body on the side-walls.

Q. How about the operation on this side?

A. In this side the oil and gas will flow onto the baffle "L-prime" and will be diverted to the side-wall and flow downwardly in a thin body.

Q. (By Mr. F. S. LYON.) And is there any reference whatever in this specification of the Newman patent to oil? A. It is—

Q. Answer the question briefly, yes or no.

A. What is the question?

(Question read.)

A. I can't say whether the word "oil" is used in there or not.

The COURT.—This is a water and gas separator, is it not?

Mr. BAGG.—Yes. That is the patent.

Mr. F. S. LYON.—A water and gas separator.

Q. (By Mr. BAGG.) Now, I hand you Defendant's Exhibit "G," which is a certified copy of the letters patent issued by the United States to Arthur W. Barker, dated July 13, 1909, and ask you to explain the action of that device.

A. In this case the incoming flow is through the pipe "6" and will strike the baffle-plate "7," which is arranged above the pipe "6" so that the constituents of the flow will be thrown outwardly after striking that baffle, some of them dropping directly and some of them passing down the side-walls of that receptacle giving the gas a chance to pass upwardly and then outwardly through the

(Testimony of Robert W. Smith.)

pipe "12," and the heavier constituents to [388] drop to the bottom.

Q. (By the COURT.) This is the intake?

A. This is the intake.

Q. And that?

A. That is a baffle, "7," above the end of the pipe.

Q. And it will simply strike against the baffle and then be showered out?

A. Showered out in all directions.

The COURT.—Very well; I understand that.

Q. (By Mr. BAGG.) I now hand you Defendant's Exhibit "H," which is a certified copy of patent issued by the United States to Eustice Vivian Bray, of Coalinga, California, and ask you to explain to the court the action of this device.

A. In this case there are a plurality of cones arranged in the upper part of the receptacle. Those cones are perforated. The oil and gas inlet dropping onto those cones, the flow passes through the openings in the cone so that the oil is collected in the bottom of your receptacle and the gas rises to the top.

Q. (By the COURT.) There is where the separation takes place, in the cone?

A. The gas is in this portion of the receptacle here and must pass up and outwardly through the outlet at "17."

Q. The separation of the oil from the gas takes place in the cone? A. Yes.

Q. (By Mr. F. S. LYON.) You never saw device like this Bray patent, did you?

(Testimony of Robert W. Smith.)

A. No, I never have.

Q. And you have never had any experience which would enable you to state whether or not such a screen as the screens 11, 12 and 13 would be operative or whether they would immediately clog up with the sand from the well?

Mr. BAGG.—We object to that as immaterial. It doesn't make [389] any difference whether it is operative or not.

The COURT.—What is your opinion as to that?

A. My opinion depends entirely upon the proportion of sand in the oil, the gravity of the oil, and those factors, the constituents of the flow, to cover completely, whether or not those perforations would clog or not.

Q. It depends upon the size of the perforations too, does it not?

A. That is another factor, the size of the perforations.

Q. (By Mr. BAGG.) Now I will ask you to explain if there is any float action in that. If so, explain that to the Court.

A. In this reference there is a float action controlling the oil outlet.

Q. And what is the effect of that float action with reference to the opening of the oil outlet?

A. The opening of the oil outlet is controlled by the float.

Q. With reference to the oil level?

A. The float is arranged to maintain the oil outlet

(Testimony of Robert W. Smith.)

submerged below the oil level. By a submergence of the oil outlet.

Q. (By Mr. F. S. LYON.) The purpose of the pipe "20" and trap is to permit the oil to flow out if the sand is sufficient to stick this valve "5" in the float, is it not?

A. The purpose of that float is to maintain—

Q. No, the purpose of that pipe and these connections.

A. The purpose of that pipe and connection is for the oil outlet.

Q. Under what conditions?

A. During the operation of the trap as a separator of oil and gas.

Q. Is that the normal operation of the trap, to allow the oil to go out the pipe "20" and the trap?

A. The point of it is, that if an excess of sand accumulates in the bottom of the trap the float will still operate.

Mr. F. S. LYON.—All right; that is all.

Q. (By Mr. BAGG.) I hand you Defendant's Exhibit "I," which is a certified copy of the patent of the United States to August Steiger Cooper, dated March 20, 1906, and ask you to explain the operation of that to the Court.

A. In this case the oil inlet receptacle is arranged with a reduced opening so that the oil and gas as it enters is thrown [390] against a baffle-plate "a-prime," and the plate being arranged at a tangent to the receptacle, the incoming oil flow will be thrown around the side-walls of that receptacle to drop to

(Testimony of Robert W. Smith.)

the bottom. The gas then rises from within that film of oil and gas, the oil dropping to the bottom and being controlled by a valve which is connected to the float.

Q. Is there any oil pressure-maintaining means upon the trap, do you know?

A. The pressure-maintaining means will be the pressure which is maintained throughout the entire system. That is, if we have an oil and gas inlet coming from the well at the well pressure and have a large receptacle and an outlet pipe, which is relatively small, so that the same pressure is maintained through your oil and gas pipe.

Q. If this pipe discharged into the open air without any pressure as shown here there would be no pressure, would there?

A. That would depend upon the relation of that outlet pipe to the intake pipe and to the size of your receptacle.

Q. But there would be no means for maintaining the pressure other than the possible restriction of the area of the pipe conducting the gas away.

(No response.)

Q. Now, have you said that the oil will be delivered in a film by this Cooper construction?

A. The oil and gas entering here will be diverted by this baffle to a point adjacent to the side-wall of the receptacle and pass down that side-wall in an enveloping body. The thickness of that will of course depend upon the velocity and amount of flow.

Q. I think you used the term "film" on direct, did

(Testimony of Robert W. Smith.)

you not? What was your idea of a film in that expression?

A. I don't remember that I used the word "film." I would like to know if I did.

(Reporter reads from previous answer, p. —, as follows: [391] "The gas then rises from within that film of oil and gas, the oil dropping to the bottom and being controlled by a valve which is connected to the float.")

A. By the use of the word "film" I mean that enveloping body of oil and gas passing down the side-wall.

Q. (By Mr. LYON.) Then what would you give as your idea of the thickness of the film of oil flowing down a gas-trap? You have used the term.

A. To my mind a film of oil is a body of oil practically of such a thinness that no further thinness can be obtained and still maintain a body of that oil.

Q. And you think that would be the result of this Cooper construction, that it would be so thin that it would be practically to the vanishing point, do you?

A. There would be that film on the wall. There would be part of that flow which would not pass down that wall.

Q. In other words, there might be a little spray of oil on the wall, in this Cooper device; is that it?

A. No; that is not my idea, that there might be a spray on there. Some of it would be directed on that wall to form a film, but it wouldn't be confined to throwing that film on the wall. There would be

(Testimony of Robert W. Smith.)

other portions that would drop directly through the trap.

Q. Have you any idea of which would be the greater amount or what proportion would drop direct, with this Cooper device, or what percentage would be filmed?

A. That question would depend upon the various factors, that is, the rate of flow, the constituents of the flow, and the gravity and viscosity of the oil.

Q. Now, what would be the effect, if you know, if the oil was directly discharged against the wall of the shell in an ordinary oil well producing oil and gas and the usual quantities of sand? How long would such a shell as that last, with the incoming oil, gas and sand directed against the inner space of the shell? [392] Have you any idea?

Mr. BAGG.—I object to that, your Honor, I don't think it is material, or that it cuts any figure in this case at all.

The COURT.—I think it is rather speculative.

Mr. F. S. LYON.—It is speculative, so far as this witness is concerned, I will admit, because he doesn't know anything except about writing a specification.

Mr. BAGG.—We object to that line of argument, if the Court please.

The COURT.—Yes.

Mr. F. S. LYON.—Your Honor is satisfied that this witness cannot answer it without knowing whether—

The COURT.—I would not make any comments upon the witness at the present time.

(Testimony of Robert W. Smith.)

Q. (By Mr. F. S. LYON.) You never saw any device like this Cooper patent, did you?

A. No, I have not.

Q. And have had no experience, as I understand it, with and of these gas traps?

A. You mean any of these in the references?

Q. Yes. Not the patents but the devices.

A. You mean in these patents in these references.

Q. Yes.

A. No, I have never seen any of those.

Mr. F. S. LYON.—That is all.

The COURT.—Have you any further witnesses?

Mr. BAGG.—I think we are through, your Honor, but I would like to hold the matter open until to-morrow morning.

Mr. F. S. LYON.—We have some other testimony, your Honor.

The COURT.—We will adjourn now until 10 o'clock to-morrow morning.

(An adjournment was thereupon taken until Tuesday, March 28th, 1922, at 10 o'clock A. M.)
[393]

[Endorsed]: Original. In the District Court of the United States for the Southern District of California, Southern Division. (Before Hon. Charles E. Wolverton, Judge.) Francis M. Townsend et al., Plaintiffs, vs. Davis S. Lorraine, Defendant. No. E-113—Eq. Reporter's Transcript of Testimony and Proceedings. Vol. IV, Los Angeles, California, March 27, 1922. Filed Apr. 7, 1922. Chas. N. Williams, Clerk. By R. S. Zimmerman,

Deputy Clerk. Reported by J. P. Doyle, J. J. Petermichal. Doyle & St. Maurice, Shorthand Reporters and Notaries, Suite 507 Bankitaly International Building, Los Angeles, California, Main 2896. [394]

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Los Angeles, California, Tuesday, March 28, 1922,
10 A. M.

The COURT.—You may proceed in Townsend vs. Lorraine.

Mr. BAGG.—If your Honor please, we would like to file our amended answer. We have served a copy on the other side.

The COURT.—Very well.

Mr. BAGG.—If your Honor please, the other day we announced that we would make an effort to get the patent of the Tico trap. Since that time we have investigated the matter and have found that the Tico trap itself has never been patented, and consequently we cannot produce a certified copy of that patent.

Mr. F. S. LYON.—Now we disagree with counsel as to his statement of the facts. On May 9, 1916, the patent 1,182,873 that I referred to was granted

to the Titusville Iron Company of Titusville, Pennsylvania, for practically the device as shown in the drawings of Defendant's Exhibit "C."

The COURT.—What is the date of the patent and who is the patentee?

Mr. F. S. LYON.—Charles E. Fisher; May 9, 1916.

The COURT.—Is that the same patent you refer to?

Mr. BAGG.—No, it is not, if your Honor please. That patent to Charles E. Fisher is for a valve mechanism and has no connection whatever with the patent in suit. However there is a description of the trap, but that description is only given for the purpose of showing the workings of this baffle. The trap itself has never been patented so far as we have been able to discover.

With that statement the defendant rests. [396]

**Testimony of W. C. Rae, for Plaintiffs (Recalled—
In Rebuttal).**

W. C. RAE, recalled as a witness on behalf of plaintiff, in rebuttal, having been first duly sworn, testified as follows:

Direct Examination.

(By Mr. L. S. LYON.)

Q. Mr. Rae, do you remember the first time you ever had a conversation with the defendant in this case, Mr. Lorraine, regarding his asserted invention of some apparatus in connection with that gas trap?

A. Yes, sir.

(Testimony of W. C. Rae.)

Q. Will you tell us what that conversation was, when it was and how it arose, as nearly as you can remember?

Mr. BAGG.—Now, if your Honor please, we object to that as incompetent, irrelevant and immaterial. In the first place, so far as disclosed here, it is not rebuttal testimony, and if it is intended, as I presume it is, for the purpose of impeaching some testimony Mr. Lorraine has given, we object to it for the reason that it would have a tendency to contradict an immaterial part of his testimony, and for the further reason that no foundation was laid for any such testimony in rebuttal, because neither the time nor the place nor those present was fixed in the examination.

Mr. L. S. LYON.—May it please the Court, on defendant's case defendant's counsel has asked the defendant when he had first seen a Trumble trap, and he stated that he had never seen one, the inside workings of one, until after such and such a date. We then, on cross-examination, asked the witness if he had not discussed the Trumble trap with this witness, and he said no, that he had merely gone to him and shown him his own trap, the Lorraine trap, on that date, which was earlier than the date on which Lorraine said he first saw and understood the workings of the Trumble trap. Now we propose to impeach by this witness that testimony given on cross-examination. [397] And your Honor will remember that I asked the witness particularly to relate the conversation, and if he did not state to

(Testimony of W. C. Rae.)

Mr. Rae that the only thing he had was a valve, and that he wanted to put the valve on the Trumble trap, and he stated that he knew how the Trumble trap worked; and all of this was denied by the witness, the conversation that he had was denied, and we now want to impeach that testimony by Mr. Rae, and Mr. Rae will tell us what conversation was had and what was said by Mr. Lorraine.

The COURT.—As I remember it, the words were not put in the witness' mouth, and the question asked if he did not say so and so, but, as I recall now, the witness was asked if he did not have a conversation on that subject with the witness Rae, and he denied that. I think you can go ahead and ascertain whether that conversation was had. I think your impeachment may go that far at least

Mr. BAGG.—The objection we raise, your Honor, is that it is an immaterial matter, and you cannot, of course, impeach a witness on an immaterial matter, and it will only go to encumber the record as far as that is concerned.

The COURT.—Well, I think that it goes further than that; it goes to the question of whether the witness then knew of the patent and its operation.

Mr. BAGG.—I think, your Honor, the question we asked the witness was what time it was that he first saw the interior or understood the mechanism of the Trumble trap. I may be mistaken, but I do not think there is any testimony about the fact that Mr. Lorraine had seen the Trumble trap, possibly, casually, as any other observer would see it, before

(Testimony of W. C. Rae.)

this, but he knew nothing about the workings of the trap before the time he testified.

Mr. L. S. LYON.—That is what Mr. Lorraine stated. Now [398] we expect to show by this witness that Mr. Lorraine disclosed to him and stated all the facts as to how the Trumble trap worked and showed the witness how his valve could be put on the Trumble trap, and this was before he had any Lorraine trap at all.

The COURT.—I will hear the testimony.

Mr. BAGG.—Exception.

Q. (By Mr. L. S. LYON.) State what that conversation was and what was said and the circumstances.

The COURT.—You may state whether you had such a conversation first.

A. I had a conversation with Mr. Lorraine, and he came to my office. He was sent up by a friend of mine, Mr. Barnes, of the National Supply Company. He showed me the drawings of a gas trap valve.

Mr. BAGG.—We object to that unless he fixes the time and place.

A. (Continuing.) The place was at my office, No. 916 Higgins Building, Los Angeles, about the end of 1919 or the first or second month of 1920. There were several visits he made to me. I don't recall the date, but it started at the end of 1919, as I recall it. I was going back and forward to the east every sixty days, and he came up to see me nearly every time I came home. The only thing he showed

(Testimony of W. C. Rae.)

me was the valve. He says, "I have examined a number of traps, and I think the Trumble trap is the best in the field so far"; that "I have a valve that I would like to sell your Company." I put up the proposition to our Mr. Trumble, who was experimenting with the valve at that time, and he says, "I am not interested." Then the thing was practically dropped for several months.

Mr. BAGG.—We object to any conversation that took place between him and Mr. Trumble. [399]

The COURT.—Yes.

A. (Continuing.) It was absolutely necessary for me to put it up to the man who was working on the valves for my company. I am merely the sales representative, remember.

The COURT.—But your conversation with Mr. Trumble is not—

A. Well, that is all right.

Q. (By Mr. L. S. LYON.) Now, when was it, if ever, that Lorraine first showed or explained to you that he had a trap, with relation to this conversation?

A. Six or eight months later.

Mr. BAGG.—Now we object to that because that has no bearing on this case, and the testimony of this witness does not show that Mr. Lorraine ever explained to him that he knew the interior working of the Trumble trap or the principle.

The COURT.—I think you had better confine yourself to that question.

(Testimony of W. C. Rae.)

Q. (By Mr. L. S. LYON.) Will you state anything further that you remember concerning the conversation you had with Mr. Lorraine, that early conversation, with respect to what he understood or whether he understood the construction or operation of the Trumble trap?

A. He didn't state anything about the knowledge he had of the Trumble trap workings at that time.

Q. What did he say?

A. He merely said he had a valve that would work with our trap and would like to sell it to us.

Mr. L. S. LYON.—That is all.

Mr. BAGG.—Now, if your Honor please, we move to strike out all of the testimony of this witness for the reason that it does not tend to impeach any of the evidence given by the defendant in an immaterial matter.

Q. (By the COURT.) Did he say to you at that time that [400] he was acquainted with the workings of the Trumble trap?

A. I didn't go into details

The COURT.—That is all he said?

A. That is all he was talking about.

Mr. L. S. LYON.—The evidence is, your Honor, by the defendant himself, that he had a conversation with this witness, so it does not come under the hearsay rule anyhow; and in the second place I asked the defendant yesterday that very question, didn't he state that the Trumble trap was the best trap, and that he had a valve that he wanted to put on it, and he said no, he did not.

(Testimony of Paul Paine.)

The COURT.—I will let the statement of the witness stand for what it is worth.

Mr. BAGG.—Exception.

The COURT.—Any cross-examination?

Mr. BAGG.—No questions. [401]

**Testimony of Paul Paine, for Plaintiffs (Recalled—
In Rebuttal).**

PAUL PAINE, recalled as a witness on behalf of the plaintiff, in rebuttal, testified as follows:

Direct Examination.

(By Mr. F. S. LYON.)

Q. Mr. Paine, you are the same Mr. Paine who testified on direct examination? A. Yes.

Q. You heard the testimony of the defendant Lorraine with reference to the maintenance of an oil level in the Lorraine trap, did you? A. Yes.

Q. Based upon your knowledge and experience, what have you to say as to the maintenance of the oil level in the Lorraine trap?

Mr. BAGG.—Now we object to that as incompetent, irrelevant and immaterial. There is no dispute about the oil level in the Lorraine trap.

Mr. F. S. LYON.—Well, we are going to dispute it.

Mr. BAGG.—And I do not see how this has any bearing in rebuttal of any evidence that Mr. Lorraine may have given. In the first place, if he is testifying as an expert witness counsel should put to him the question that will enable him to make an

(Testimony of Paul Paine.)

answer and lay the proper foundation for his answer in the question. The mere fact that he heard what this witness testified I cannot see has any bearing on the case at all.

The COURT.—Well, there has been considerable testimony about the oil level, but whether or not it referred to the Lorraine trap is another question. It seems to me the principal controversy came up about the oil approaching a level.

Mr. F. S. LYON.—I will interrupt the proceedings just long enough to offer in evidence this portion of the 1922 Lorraine trap sold March 17, 1922, to the General Petroleum [402] Company by the defendant, being a portion of the trap that was demonstrated last Friday to the Court in the presence of counsel and the parties, as Plaintiff's Exhibit No. 22.

Mr. BAGG.—We object to it because, in the first place, it has not been properly identified, and in the next place it is not proper rebuttal.

The COURT.—Well, the Court saw that trap, and I am pretty well prepared to say, myself, that is part of the trap.

Mr. BAGG.—That is true, but we do not think this particular part of it has been properly identified. Of course I take it your Honor will probably recognize that as the trap you saw, but we think for the purpose of the record, it has not been properly identified, and in the next place, it is not proper rebuttal testimony.

The COURT.—Have you got the witness here?

(Testimony of Paul Paine.)

Mr. F. S. LYON.—Yes. I will ask that it be marked for identification now and proceed with this witness.

(Plaintiff's Exhibit No. 22.)

(Question read.)

Mr. BAGG.—We wish to insist upon the objection, your Honor, that it is not proper rebuttal testimony.

The COURT.—There has been considerable testimony about the manner in which the oil and gas as it came in would foam up and be some time in settling so as to get the level of the oil itself.

Mr. BAGG.—Yes, sir; he is asking about the oil level, and that might mean the oil level in the receiving chamber or in the settling chamber. I take it that the oil level he refers to is the oil level in the settling chamber which manipulates those floats.

Mr. F. S. LYON.—My question was all-comprehensive, as I did not wish to lead the witness.

The COURT.—Well, go ahead. I will hear it.

A. The oil, since it is a fluid, must come to a common [403] level in all portions of this trap so long as the chambers are inter-communicating as they are in this trap. Now it is possible that if the well were to make a very violent surge of oil in large quantity, just momentarily in the receiving chamber the level of the fluid would be higher, but that would obtain for a very limited period of time, and then the fluid must come, in response to physical laws, to a common height throughout the entire trap.

(Testimony of Paul Paine.)

Q. (By Mr. F. S. LYON.) If I understand Mr. Lorraine's testimony correctly, he stated that on this side (indicating) of the baffle-plate at which the oil is let into the trap the oil is always higher than it is on the other side of that baffle-plate. What have you to say in that regard?

A. I do not consider that to be the case, except in those instances of very violent surges, which would be, as I have said, only momentary.

Q. Reference has been made in the testimony to wet gas and dry gas. Please explain to us the difference between these two.

A. Natural gas as it occurs is found in two major classes: the first is in those wells which produce gas only, and such gas occurs frequently at very high pressure in very large volume and is the major source of supply for industrial and domestic consumption; and the second form of occurrence of gas is that which occurs along with the oil from oil wells. The oil itself consists of a great number of different oils which go to make up the crude oil as it occurs, and it is the function of the refiner to separate these different divisions into classes which have a commercial market. It was observed early in the history of the oil industry that that [404] gas which occurs along with the oil is particularly impregnated in many instances with vapors of gasoline, which are the most easily evaporated from crude oil, and in that manner the natural gas came to have a division into the two classes of dry gas, which is that gas that occurs in wells which produce

(Testimony of Paul Paine.)

gas only, and wet gas, which is that gas which comes along with the oil and contains some gasoline vapors. The division is not a sharp one, because sometimes the so-called dry gas has a very small quantity of gasoline vapors in it. During the period from 1905 to 1910 the attention of the oil industry became directed particularly to the value of this small quantity of gasoline vapor contained in the gas occurring along with the oil from oil wells, and that has led to the so-called casing-head gasoline industry and the recovery from the gas of those vapors and the obtaining of an additional amount of gasoline, which is equal to about fifteen per cent of the total quantity of gasoline produced in the United States.

Q. (By the COURT.) Can dry gas be reduced to oil?

A. No, sir. The dry gas is used for fuel in oil field operations, or is carried to where there is a market and a demand. That is the major source of supply, natural gas, for cities and industrial plants. The dry gas continues as a gas always.

Q. There is no way of reducing that to an oil or liquid? A. No; that continues as gas.

Q. (By Mr. F. S. LYON.) It is what is known as a fixed gas? A. Yes, sir.

Q. If I understand the statement correctly, Mr. Lorraine has stated that the maintenance of a pressure on the gas trap throws the gasoline vapors back into the oil. Is [405] that correct?

A. That cannot be, because of the physical laws involved. After this gasoline vapor has gone over

(Testimony of Paul Paine.)

from the form of liquid in the oil into a form of vapor contained along with the gas, then the pressure and the temperature factors necessary to recondense that into a liquid again are so great that they are beyond the conditions which obtain around any gas traps ordinarily in use in the oil fields. The function of the pressure on a gas trap is presented, in that it prevents, through the holding of a pressure, the evaporation of gasoline into that vaporous condition.

Q. In other words, preventing the gasoline from vaporizing and mixing with the fixed gas.

A. Then when the gasoline in the oil, or a portion of it, has been vaporized and has become mixed with those gases which continue as gases and are not condensable, then in order to recondense those vapors pressures and temperatures must be reached which are practically never present in these gas traps.

Q. I believe you explained that in your former testimony in referring to the fact that ten pounds or less pressure with certain gases would hold them in a liquid form where, if mixed with other gases and absorbed in them, it would be necessary to run as high as 150 to 300 pounds pressure to liquify that gas which could be held as a liquid at ten pounds or less.

A. Yes. The principle involved is that known as the principle of partial pressures. The usual operating pressure at plants at which the gasoline vapors are recondensed into the liquid form ranges around two hundred and fifty pounds.

(Testimony of Paul Paine.)

Q. If I remember correctly, Mr. Lorraine said that in his trap he could separate the oil according to gravity. [406] Is such a fractionation of the oil as it comes from a well possible as it comes from one of the gas traps?

Mr. BAGG.—Now, your Honor, I do not think Mr. Lorraine made that statement. In the next place, I don't think it has any bearing on this case. As to separating the oils with reference to their specific gravity, that is the general principle on which all these gas and oil separators are based. As they come from the oil and gas well they separate into the various ingredients that compose the crude oil, the sand dropping to the bottom, the water next, and the oil next, and the gas on top. I don't think there is any dispute about that, and I don't think Mr. Lorraine ever intended to make any distinction as the attorney for the other side has attempted to put in the mouth of the witness.

(Last question read.)

Mr. F. S. LYON.—In view of the objection I will reframe the question.

Q. How is oil fractionated to take off of the oil different gravities or boiling points?

Mr. BAGG.—Now, if your Honor please, we object to that as unnecessarily encumbering the record. It is getting the record full of a lot of matter that is highly edifying, no doubt, and adds considerable to our knowledge, but at the same time I do not see where it cuts any figure in this particular case, with reference to the separation and refine-

(Testimony of Paul Paine.)

ment of oils, because I do not think anybody ever contended for a moment that oil and gas separators were intended for the purpose of refining oil or separating them according to their various degrees of density. I am sure there is nothing in the evidence that shows any such contention on our part.

Mr. F. S. LYON.—We will argue what Mr. Lorraine's testimony [407] was, but he used the term that the oil was separated according to gravity, and I just want the Court to understand that no separation of the oil into different gravities of oil is possible in this gas trap.

Mr. BAGG.—We admit that we do not make any pretention to refining the oil or separating it into its various constituents.

Mr. F. S. LYON.—And that nothing of the kind is possible in a gas trap.

Mr. BAGG.—We will not admit that.

The COURT.—I understand the witness made some reference to the oil settling according to gravity.

Mr. BAGG.—Yes, we admit that. There is no question about it.

The COURT.—I don't remember anything that he might have said about the separation of the oil according to gravity; but you can ask that question. I will say to counsel that these matters of the separation of oil and all those things are entirely new to me, and I don't know what bearing they are going to have hereafter when the argument is reached, and

(Testimony of Paul Paine.)

I have allowed a wider latitude on that account than I otherwise would.

Mr. BAGG.—In view of that fact, your Honor, we wish the Court to understand that we are not trying for one moment to shut off any information the Court would like to have, and if any of our objections come to that point we will waive them.

The COURT.—I will hear the answer.

A. I have never known a gas trap to separate the oil into its constituents with respect to their specific gravity, and I cannot conceive it as being possible.

Q. (By Mr. F. S. LYON.) Why not?

A. Because the oil is so intimately mixed that even when it is stored for a long period in tanks there is [408] only a very minute difference in the gravity between the weight of the oil at the top of the tank and the weight of the oil at the bottom of the tank, and even then there is nowhere near any line of demarcation between the different fractions.

Q. Now, very briefly explain to the Court what is necessary and how the crude oil is separated into its various boiling points and gravities.

Mr. BAGG.—Now, if your Honor please, we would like to have the record show that we are not objecting to this because of the fact that it is for the general information of the court.

The COURT.—Yes; explain that briefly.

A. The oils that go to make up crude oil evaporate at different temperatures. The oil is then heated, and that oil which evaporates at the lower tempera-

(Testimony of Paul Paine.)

ture comes off first and is condensed, and that comprises gasoline; then that portion of the oil which evaporates at a slightly higher temperature is taken off through raising the temperature.

Q. (By the COURT.) And what do they call that?

A. And that, out here in California, is called distillate; and then the oils which come off at still higher temperatures go over into the fractions of coal oil, kerosenes and stove-oil, and the progressively heavier oils, and that is the fundamental process involved in the refining of oil, is to heat it and take off—

The COURT.—I think that is enough on that.

Mr. F. S. LYON.—That is all I want.

Mr. BAGG.—Now we also wish the record to show, your Honor, that we admit all of this as being true.

The COURT.—Very well.

Q. (By Mr. F. S. LYON.) When one of these gas traps is used [409] and the oil is to be moved from the trap to a tank or a point higher than the trap is it possible to so discharge the oil without a pressure in the trap?

Mr. BAGG.—Now, if your Honor please, we object to that because it is not proper rebuttal, and because Mr. Lorraine testified positively that that was the fact. The record will show that he admits that.

Mr. F. S. LYON.—You admit that it is necessary,

(Testimony of Paul Paine.)

to maintain a pressure in the trap to discharge the oil?

The COURT.—I think that is self-evident. I don't see how it could be otherwise.

Mr. BAGG.—No, sir; it could not be.

Mr. F. S. LYON.—All right.

Q. You are familiar with the gas lines from these gas traps to gasoline absorption plants, are you?

A. I have installed a good many of them.

Q. What have you to say in regard to whether such lines contain valves in them or not?

A. So far as I have ever observed, they—

Mr. BAGG.—Wait a minute. That is objected to as incompetent, irrelevant and immaterial unless he proves it with reference to the Lorraine trap. We certainly do not think that as to all these traps it makes any difference.

Mr. F. S. LYON.—I think we can show a general construction, your Honor, and general use in regard to all these absorption plants, that they always have in the gas lines the valves we have been referring to here, and that they are necessary elements.

Q. (By the COURT.) Is it necessary to have such valves? I will hear the answer in that form.

A. Gas lines from gas traps to absorption plants invariably have—

Q. Well, is it necessary? A. Yes, sir. [410]

Q. (By Mr. F. S. LYON.) Would a separation device or gas trap in which the oil and gas or products from the well are delivered into the trap, with

(Testimony of Paul Paine.)

the end of the delivery pipe directed against the inside of the trap, be commercially practicable?

A. No, it would not.

Mr. BAGG.—Wait a minute. We object to that as incompetent, irrelevant and immaterial. I don't see the purpose of it.

Mr. F. S. LYON.—It shows the prior art, your Honor. For instance, just leave this pipe here (indicating) and let it discharge right against that baffle-wall in there. A direct discharge against the wall is what I have inquired about.

Mr. BAGG.—Whether it is practicable or not, your Honor, doesn't cut any figure in this case whatever.

The COURT.—I think that is going outside of the given instruments that have been introduced here in evidence. None has been introduced here which gives that operation, that I know of; the one that comes nearest to it is where it is simply thrown up and it takes different directions as it strikes the top of the—

Mr. F. S. LYON.—Yes; and there is one of the witnesses who testified to one in which it was a vortex arrangement. I am coming to that in the next question.

The COURT.—Where it goes right around the trap?

Mr. F. S. LYON.—Yes.

The COURT.—Well, you may ask him about that.

Q. (By Mr. F. S. LYON.) Would, in your opinion, a device in which the intermingled oil, gas and

(Testimony of Paul Paine.)

sand, or whatever was delivered from the well, was delivered against the inner periphery of a cylindrical drum or trap—

The COURT.—You better get that patent and refer to it.

Q. (By Mr. F. S. LYON, Continuing.) —like Defendant's Exhibit [411] "I," Cooper Patent No. 815, 407 (handing same to witness), be commercially operative?

Mr. BAGG.—Now we object to that as incompetent, irrelevant and immaterial. This exhibit was merely introduced for the purpose of showing the state of the art, and whether or not a trap or device that was patented at the time this one was patented was a workable arrangement is immaterial.

The COURT.—I think that calls for a conclusion. You can only determine that by actual experience with the trap.

Q. (By Mr. F. S. LYON.) Well, what would the action of the sand delivered from an oil well producing gas and oil be in a trap constructed like this Cooper patent?

Mr. BAGG.—We object to that for the same reason.

The COURT.—I think I will hear it.

A. The action would have a wearing effect on the inside of the trap through the sand-blast of the sand coming along with the oil.

The COURT.—Yes; I think that was admitted to be true.

Mr. BAGG.—Yes, sir.

(Testimony of Paul Paine.)

Q. (By Mr. F. S. LYON.) And is there or is there not such sand-blast with these oil-and-gas-producing wells? A. Yes; with many of them.

Q. To what extent has that been found a serious factor with gas traps?

Mr. BAGG.—Now, if your Honor please, we object to that. The fact that it wears out is no evidence that it is impracticable. Though it may wear out every twenty-four hours, that doesn't show that it is not an operative device, and that is the purpose, as I stated a few minutes ago, of introducing this, to show the state of the art, and if that worked for an hour it is an operative device. The mere fact that the plaintiff comes in here and presents [412] a trap that operates longer than that or is an improvement upon that does not give him any right to claim that because this patent might be inoperative according to his expert's testimony, that would not make it show the state of the art, as we contend in this case.

The COURT.—Utility is one of the elements of a patent, is it not?

Mr. BAGG.—Yes, sir; utility is one, but it doesn't make any difference about the degree of utility. If that would operate for five or ten minutes, or an hour, it would be an operative device.

Mr. F. S. LYON.—In the Webster loom case, your Honor, the patent was sustained solely on the ground that the Webster loom produced—now, my figures are subject to correction from the fact that I am speaking entirely from memory—it was either

(Testimony of Paul Paine.)

40 or 60 yards, where the old looms produced either 20 or 30—in other words, double the amount, approximately, and the quality of increased utility is patentable in that sense; but I am going further to show by this witness, by the next question, that a gas trap that would not stand up twenty-four hours would be, from a commercial standpoint, practically without any utility whatever, and I will ask the witness to answer my last question, if that is correct.

Mr. BAGG.—Well, we object to that.

The COURT.—I think you have illustrated this trap sufficiently for me. I understand the principles of the trap, and I think I understand the action of the sand or what effect the action of sand driven on to that would have. I think that has been illustrated sufficiently.

Mr. BAGG.—I was going to say, if your Honor please, that, as I understand counsel, he has misconceived our idea in this matter. We are not trying to vitiate or void the patent of Mr. Trumble; we are simply showing [413] the state of the art. Now, if we were using this as an anticipation then his argument might have some bearing because of the fact that this patent we were introducing would be impracticable according to this theory. Of course there is evidence here to show that his statement as he makes it is not true, that is, that it would not wear out immediately; but we are not trying to void his patent.

Mr. F. S. LYON.—You may take the witness.

(Testimony of Paul Paine.)

Cross-examination.

(By Mr. BAGG.)

Q. Mr. Paine, if the oil and gas as they come from the oil well were so mixed and churned up that it resembled a broth or foam, and the well was flowing either constantly or in heads, there would be, while the well was flowing, in the Lorraine trap, as you understand its operation, a higher level on the side of the partition into which the oil and gas in this foamy condition comes than on the opposite side or in the settling portion of the trap where the oil has already been separated from the gas and the gas has passed off, would there not?

A. There would be,—only in case this froth or foam were so attenuated that it had the characteristics of a gas instead of a fluid. But if it behaves as a fluid then it must come to a common level, and the well, on the occasion of a very heavy surge of oil, might cause the fluid level to be slightly higher upon this receiving chamber for an instant, but only for an instant.

Q. Now, let us take this trap here (model), and take this baffle-plate for the purpose of this present question. We will suppose that the oil level as it stands in the trap has reached, we will say, halfway or midway between the bottom and the top of the trap so that there is what is known as an oil seal around the bottom of the [414] trap. Now, if a large portion of oil should come in here, either by reason of the well flowing in heads or for any other reason, would it not be possible, with this gas com-

(Testimony of Paul Paine.)

ing in from the oil and gas well—or this oil and gas—in a foamy condition, this oil down here being in a settled condition, as long as the oil was flowing wouldn't this level in here be considerably higher than the level in here (indicating)?

A. Since there is a large open communication at the bottom the surface of the oil must reach a common level on both sides.

Q. Yes. That is, after the oil has ceased flowing there it is piling up in here, is it not?

A. Well, as I have said, that piling up influence I would only look to be momentary after the well had stopped and then started flowing at a very violent rate; but that condition would only obtain for a very short period because the level of the fluid on both sides of that compartment must be the same.

Q. That would be true if the specific gravity of the oil in the lower chamber was exactly the same as that in the smaller chamber, would it not? In other words, these two chambers here, with this communication underneath, and being tight here, would have a tendency to balance in proportion to their respective weights, wouldn't they?

A. Well, I am sorry, but that statement is not intelligible to me.

Q. Well, now, suppose, for instance, we will say this was soapsuds on this side and this was pure water on this side, and you were pouring in soapsuds and water in here (indicating on model). Now, these would range themselves in proportion to their respective specific gravities, would they not?

(Testimony of Paul Paine.)

A. Yes.

Q. This would be higher on this side because of the lower specific gravity, and this would be lower on this side—I should say higher specific gravity, I presume—at any rate [415] lighter—than it would on this side, would it not?

A. Yes. The relative weights of those two fluids would affect the—

Q. The oil level. A. The behaviour.

Q. Yes.

A. But where it is oil on both sides I cannot conceive of the level being at different heights.

Q. Well, now, oil after the gas has been taken off from it is of a lower specific gravity or heavier than the oil as it comes from the oil well impregnated and surcharged with gas, is it not?

A. Yes; after the gas has left it, oil is, of course heavier than the mixture of the oil and gas.

Q. Then if the oil and gas as it comes from the well is in a foamy or frothy condition, thoroughly surcharged with gas, that comes into the smaller chamber in the Lorraine trap, and while in that chamber the gas is taken off, then the oil in the bottom of the chamber would be heavier than the oil in this side, would it not?

A. That depends upon how fast the gas separates from the oil. The mixture of fluid coming into the trap is lighter than an equal volume of oil after the gas has been removed from it.

Q. And these would range themselves like a balance in a scale, would they not, according to their

(Testimony of Paul Paine.)

relative weights? This on this side would have to be as heavy in proportion as that on the other side?

A. If your liquid there is so foamy and frothy that it behaves as a gas instead of a fluid, then of course its behaviour must be in response to the law of gases—it will spread out in order to occupy all of the space containing it instead of—

Q. This would be lighter over on this side in proportion to the gas content, would it not? [416]

A. Well, I would like to have that question clearer. I don't want to evade.

Q. Well, as a matter of fact, if this oil well produces gas and oil, as it comes from the oil and gas well this oil and gas is lighter than the oil itself after the gas is taken out, is it not?

A. Undoubtedly.

Q. Now, you spoke a little while ago about the pressure on the inside or interior part of an oil and gas separator not producing or having any effect upon the oil and gas while in the separator. Is that correct?

A. No. I wouldn't say that the pressure has no effect. I think the pressure has a very strong influence.

Q. As a matter of fact, then, if the oil and gas comes into an oil and gas separator and there is pressure in that separator, regardless of how it comes, it would have a tendency to cause the oil to hold—some writers say dissolve—the lighter hydrocarbon, such as gasoline, and only the dry gas would come off. Isn't that correct?

(Testimony of Paul Paine.)

A. Its tendency would be to prevent the evaporation of some of those lighter gases.

Q. Yes; just to hold it in; while if it did come off then it would require some other process to put it back in?

A. Yes. That is because of the fact that the capacity of the gas to carry gasoline in the form of a vapor decreases as the pressure is raised.

Q. In other words, when the gasoline once comes off of the oil it is like a prisoner escaping from jail—you have got to go and catch him again. Isn't that correct?

A. If it comes off of the oil and is mixed with those gases which are always gases, then it is more difficult [417] to recondense it.

Q. And you couldn't do that in a gas trap?

A. Not normally, under any of the ordinary operations of gas traps.

Q. Now these gas-valves you speak of on gas lines are put on for the purpose of reducing the flow or producing pressure in the absorption plants, are they not?

A. Well, they are put on for a variety of purposes. One valve which should be put on all gas lines of that type—and I will say are put on everywhere in good practice—is a pop valve, which, when the pressure reaches a certain height, will release and allow the gas to escape. That is for the protection of the machinery, just as a pop valve is put on a boiler. Then other are valves put in the line so that the flow of gas may be entirely closed or re-

(Testimony of Paul Paine.)

stricted. Then there are also regulating valves put on, and which I think you have in mind, that is, valves which regulate the pressure of the gas on the absorption plant side of the valve. These are put on there for the purpose that if the pressure is varying on the gas trap—and accordingly on the gas line—it may be desired to have the gas delivered to the absorption plant at a uniform pressure. The working of those valves is to maintain that uniform pressure on the discharge side or absorption plant side of the valve.

Q. And that is usually put on near the absorption plant, is it?

A. The regulating valve is usually put on near the absorption plant. The pop valve is more commonly put on up near the trap.

Q. The oil requires a pop valve on all traps, does it not, for safety? A. I don't know that it does.

Q. Well, they all have them on, don't they? [418]

A. Oh, yes. The interests of the company require that.

Q. You don't know whether the law requires the safety valve or not?

A. The law requires it on boilers, but I don't know specifically as to—

Q. Well, these pop valves you speak of let the gas off into the atmosphere anyway, don't they?

A. Usually, when the gas reaches a certain degree of pressure.

Q. Yes, but they don't have anything to do towards maintaining the pressure?

(Testimony of Paul Paine.)

A. Oh, yes; that is exactly what they do. They hold the pressure from going above a certain point, but of course they don't hold it down—

Q. But they don't maintain the pressure. The valve would be there and would not operate until the pressure got to a dangerous point, would it not?

A. Certainly. They don't maintain a uniform pressure.

Q. And they don't maintain any pressure? As a matter of fact when the pressure gets above that it allows the pressure to escape, does it not?

A. Well, it allows such gas to escape as is necessary to hold the pressure at the point for which the valve has been set.

Q. Yes, or to reduce the pressure to that point?

A. Yes; to bring so that that is the maximum pressure the gas would reach.

Q. So that it does not maintain the pressure. Its purpose is to reduce the pressure, is it not?

A. Well,—

Q. Well, suppose, now, as an illustration, that that valve was set for two hundred pounds. Now until two hundred pounds was reached in that gas trap that valve would [419] not operate at all, would it? A. No.

Q. It would be just like any other closed portion of the trap? A. Yes.

Q. Now, when that gas pressure, if it did, got above two hundred pounds, say it got up to four hundred pounds, then this trap would open and reduce the pressure would it not?

(Testimony of Paul Paine.)

A. That wouldn't be the action. When the gas reached two hundred pounds or very slightly over, of pressure, then it would allow sufficient gas to escape so that the pressure would continue at two hundred pounds.

Q. It would cut it down from above two hundred pounds to two hundred pounds, would it not—let it escape?

A. From very slightly over two hundred pounds.

Q. Yes. Well, whatever it was, whether it was little or much? A. Yes.

Mr. BAGG.—That is all.

Redirect Examination.

(By Mr. F. S. LYON.)

Q. I want to ask you one further question on direct, Mr. Paine: You were present at the demonstration of this Lorraine trap a portion of which has been marked for identification as Plaintiff's Exhibit No. 22, on last Friday, were you? A. Yes.

Q. Did you observe the amount of oil that was being pumped from that demonstration? A. Yes.

Q. Based upon your experience, are you able to tell us [420] approximately what the flow of oil was in that demonstration?

Mr. BAGG.—Now, we object to that as incompetent, irrelevant and immaterial.

The COURT.—I think that question was asked out there somewhere.

Mr. F. S. LYON.—I thought your Honor said we should ask it this morning. That is the reason I ask it.

(Testimony of Paul Paine.)

The COURT.—Well, then you may ask it.

A. The rate of flow I would judge to have a minimum of anywhere from 1,000 to 1,200 barrels per day, at that rate.

Q. (By the COURT.) Is that the rate at which it was flowing out there?

A. Yes, sir. At that rate, if it had continued, it would have flowed an amount of not less than somewhere from 1,000 to 1,200 barrels a day. And I might add that, for my own information, I checked up the capacities of centrifugal pumps which were pumping the oil and found that the amount given simply in the manufacturer's catalogue as the capacity of that pump was something in excess of that.

Q. Was that pump running to its capacity when it was operating there?

A. No, sir; I don't think it was. The maximum capacity of that pump was given as somewhere about 3,000 barrels a day and its minimum capacity in the range of 1,300 barrels a day. I don't think it was working anywhere near its maximum capacity.

Q. (By Mr. F. S. LYON.) Just for the information of the Court, based upon your experience with these flow nipples which control the flow from an oil well, will you illustrate how large a stream it takes for various productions per day, very briefly?

A. Well, this flow-plug is a restricted opening put in [421] the pipe coming from the well for the purpose of holding back some of the flow. I

(Testimony of Paul Paine.)

have had a well with a flow-plug in it of one inch in diameter produce 14,000 barrels a day.

Q. Did that have a high pressure?

A. Yes, sir; but I don't know how much it was. The well at Santa Fe Springs has been producing about 4,000 barrels a day with openings of about three-quarters of an inch, and it has had some six or seven hundred pounds pressure on it. A tremendously large quantity of oil can come through a small opening if there is enough punch back of it.

Q. Then it is a very small stream of oil, comparatively, that will amount to 100 barrels a day?

A. Oh, yes.

Mr. LYON.—That is all.

Recross-examination.

(By Mr. BAGG.)

Q. But it all depends on, first, the pressure, and next the viscosity of the oil, whether or not it is light or heavy. So then do you think that with the pressure on that line out there the other day, only ten pounds pressure, that that was sufficient to put a thousand barrels of oil through that small pipe?

A. Well, it was not the pressure that was putting the oil through the pipe—that is, it was not the ten pounds of gas pressure that was putting it through. There was a centrifugal pump driving it through.

Q. Well, you don't know what pressure was developed on that centrifugal pump, do you?

A. No.

Q. There was nothing stated in the evidence as to what that was.

(Testimony of Paul Paine.)

A. No. But we can compute—I haven't done it in detail, but one can compute from the action of a centrifugal [422] pump how much fluid is being pumped by means of it. I didn't do that; I simply referred to the manufacturer's catalogue of the capacities of the pumps, because I have used those tables in my actual designing and construction of plants.

Q. So then about all the testimony you can give in this matter is simply the statement that the amount of oil that would flow through that line or any other lines would depend altogether on the amount of pressure on the line behind the flowing oil and the character of the oil as to its viscosity?

A. And a great many other comparatively inconsequential items, such as size of line and things of that kind. But my observation of the flow was simply compared with the flow of similar streams of oil at wells where I have had an opportunity to measure how much oil the wells were producing.

Q. Now, that oil that was used out there in that experiment was dead oil which had been afterwards impregnated, that is, gas allowed to mingle with it, as it came up through that pipe, was it not?

A. Yes.

Q. And that oil out there was pretty high gravity, was it not?

A. I don't know the gravity. I would judge it to be about a medium gravity of oil, eighteen or nineteen gravity, probably, which would be considered low rather than high gravity.

(Testimony of Paul Paine.)

Q. Did you see the oil as it came from that elbow that day?

A. Yes, I went up and looked at it.

Q. Now, as a matter of fact, you observed how the oil acted after it came out of the elbow, didn't you?

A. Yes.

Q. Some of it did strike this baffle-plate and flow [423] down the side, didn't it (indicating)?

A. Yes.

Q. Some of it struck over here, didn't it?

A. Went over to the—

Q. And some of it had splashed out through here (indicating). The Court had to put an overcoat on in order to protect himself from it?

A. There was very small—a few drops.

Q. Came out through here? A. Yes.

Q. And a good deal of it dropped straight down into the pit, didn't it, in a kind of shower?

A. I looked down there and it seemed dark to me, and I didn't ascertain what proportion was dropping down there.

Q. But you would say there was some that went down there?

A. There was some that dropped.

Q. And just splashed around on that baffle-plate, didn't it? It came out and hit the baffle-plate and some of it struck over here and sort of splashed—a sort of splashing effect?

A. Some went down on the baffle-plate and some went over in the corner.

Mr. BAGG.—That is all. [424]

Testimony of W. L. McLaine, for Plaintiffs (In Rebuttal).

W. L. McLAINE, called as a witness on behalf of the plaintiff, in rebuttal, having been first duly sworn, testified as follows:

Direct Examination.

(By Mr. L. S. LYON.)

Q. Please state your name.

A. W. L. McLaine.

Q. You are connected with the General Petroleum Company, are you not? A. Yes, sir.

Q. What is your office with that company?

A. Director of Production.

Q. As Director of Production for the General Petroleum Company have you charge of Tonner No. 1 well of that company? A. Yes, sir.

Q. Do you know if there is a Lorraine gas and oil separator on that well? A. There is.

Q. Were you ever present when an adjustment was made of the gas outlet valve of that trap?

A. Yes.

Q. Will you tell us the reasons for making that adjustment and what adjustment was made?

A. Well, I wouldn't be able to determine as to the adjustments, on account of not knowing the mechanism on the inside of the trap, but I think both valves were regulated at the same time. The well was producing oil through a flow nozzle—

Mr. BAGG.—Now, if your Honor please, we object to any further testimony on the part of this

(Testimony of W. L. McLaine.)

witness. In the first place he does not appear to know why; and he testifies that both valves were adjusted, or two valves were adjusted, [425] and he has not distinguished whether that has anything to do with the gas outlet or not. I think it is immaterial and that it is unnecessarily encumbering the record.

Mr. L. S. LYON.—If you will give him time I think he will state what he knows and what he did. He said he had never seen the inside of the trap, not that he didn't know what had been done with the valves.

The COURT.—Proceed.

A. We had a line running from several wells, a gas line, into our absorption plant in which we were maintaining a certain pressure, and it was decided that—we wanted to see if we couldn't reduce the pressure from this particular well by taking the flow nozzle out of the discharge of the well and running the lead line from the well direct into the trap and adjusting the valves on the trap to see if we couldn't maintain a certain pressure on a regular pressure on the well in order not to throw too much pressure on the well which would restrict the flow of the oil, and I suggested to our superintendent of production that I thought by taking the flow nozzle out of the line we possibly might discharge the oil directly into the trap and regulate the valves to maintain the required pressure on the trap.

(Testimony of W. L. McLaine.)

Q. (By the COURT.) Do you mean the back pressure?

A. The back pressure, instead of using the flow nozzle.

Q. (By Mr. L. S. LYON.) And what did you do in that regard?

A. Well, there were two adjusting nuts on the oil valve and the gas valve that—

Q. Maybe you can use this Plaintiff's Exhibit 12 for the purpose of showing the Court what you refer to (handing the same to witness).

A. Each one of these valves has an arm with a slot cut across it in this manner by which the bolts can be loosened and this valve could be turned down and the other one up, or *vice versa*; you could set them at any particular angle [426] that you might require. But by lowering this valve on the oil side and raising the gas side it would open the oil valve and close the gas valve, and *vice versa*.

Q. (By the COURT.) These are the discharge valves. So we loosened the nuts on here and made two or three adjustments and watched the gage on the top of the trap to see if she would maintain the pressure we wanted, and when we got it to the pressure we desired we let it set and the trap held the pressure on the well that we were looking for.

Q. (By Mr. L. S. LYON.) After the adjustment what pressure, if you remember, was maintained in that trap?

A. I believe it was in the neighborhood of 28 pounds, as nearly as I can remember.

(Testimony of W. L. McLaine.)

Mr. L. S. LYON.—You may inquire, Mr. Bagg.

Mr. BAGG.—Now, if your Honor please, we move to strike out the testimony of this witness for the reason that it is not rebuttal. It does not rebut anything that has gone before.

The COURT.—I think it elucidates the situation. That manner of operating these slots was gone into while we were out at the trap on that day, and there was some testimony as to the effect of the back pressure on the well.

Mr. BAGG.—Very well.

Q. (By Mr. BAGG.) Now this was on the Tonner No. 1, was it not? A. No. 1; yes, sir.

Q. There was a back pressure on the gas line from that trap regardless of whether you moved the valves or not, was there not?

A. There was a slight pressure, yes.

Q. This was not on the Tonner No. 3?

A. On Tonner No. 1.

Mr. BAGG.—That is all. [427]

Mr. L. S. LYON.—That is all. [428]

**Testimony of M. J. Trumble, for Plaintiff (Recalled
—In Rebuttal).**

M. J. TRUMBLE, recalled on behalf of the plaintiff in rebuttal, testified as follows:

Direct Examination.

(By Mr. F. S. LYON.)

Q. Mr. Trumble, I show you a device here that has been marked Plaintiff's Exhibit 22 for Identification. What is it?

(Testimony of M. J. Trumble.)

A. That is a part of the Lorraine trap that was out in my shop.

Q. That is a part of the Lorraine trap that was demonstrated to the Court last Friday afternoon?

A. Yes, sir.

Q. And was purchased by the General Petroleum Company from the Lorraine Gas Trap Company?

A. Yes, sir.

Q. Have any changes been made in it, other than simply to cut off the section of the iron to remove it, from the condition in which it was shown on Friday afternoon? A. No, sir.

Mr. F. S. LYON.—We offer in evidence Plaintiff's Exhibit 22.

Mr. BAGG.—We offer the same objection, for the reason that it is not proper rebuttal testimony.

The COURT.—The objection is overruled.

Q. (By Mr. F. S. LYON.) I show you two devices and ask you if you know what they are (exhibiting same to witness). A. A pressure gage.

Q. Where did it come from?

A. It came in the tools or mechanics for the trap, in the box.

Q. And that box was opened for the purpose of making certain connections to demonstrate to the court these values on [429] the side of this trap?

A. Yes, sir.

Q. And this pressure gage was set out in this box—

Mr. BAGG.—If the Court please I would like to object to the leading form of the question.

(Testimony of M. J. Trumble.)

The COURT.—I think that was very leading.

Mr. F. S. LYON.—So do I, but I don't think there is any dispute about the facts.

The COURT.—Someone testified out there that that gage was not used but it was another gage of the same kind only smaller.

A. The same pressure, but not the same size dial. The box was opened up there at the time and this was taken out.

Q. That is the size of gage that is ordinarily used by this trap?

A. Three hundred pounds; yes, sir.

Mr. F. S. LYON.—We offer this as Plaintiff's Exhibit 23. That is all.

Mr. BAGG.—That is the same size pressure gage that you use on your trap, is it not?

A. On the high pressure traps.

Q. Down on the Tonner No. 3 you had the same kind of looking valve or gage, did you not?

A. A lower pressure.

Mr. BAGG.—No further questions.

Mr. F. S. LYON.—That is all. [430]

Testimony of Ford W. Harris, for Plaintiff (Recalled—In Rebuttal).

FORD W. HARRIS, recalled by the plaintiff in rebuttal, testified as follows:

Direct Examination.

(By Mr. F. S. LYON.)

Q. You are the same Ford W. Harris who has

(Testimony of Ford W. Harris.)

heretofore testified on behalf of the plaintiff in this case? A. I am.

Q. Have you examined and are you familiar with Defendant's Exhibits "E," "F," "G," "H," "I" and "J"? A. I am.

Q. Will you please take these respective patents and state briefly the construction and principles upon which the devices of these patents operate and compare the same with the plaintiff's patent, Plaintiff's Exhibit No. 1, and with the defendant's traps, Plaintiff's Exhibits 22, and 10? Be as brief as you can and get right down to the meat of each one as you go along so as not to take any more time than necessary.

A. Referring to Defendant's Exhibit "E," which is the McIntosh patent, this patent shows a pipe 9, through which the liquid is passed into the trap, this liquid being shown as passing up in a sort of fountain and flowing downwardly over some members which are secured on the outside of the pipe.

The COURT—Isn't that fastened up against an obstruction there?

A. There is no obstruction above the inlet pipe, unless it should strike against the top of the trap, which might occur if there was considerable pressure.

Q. It is the action, then, of a fountain?

A. Of a fountain, yes. It simply comes up through there, bubbles up and falls back. So far as the drawing shows, it does not strike the outer surface, or outer wall, of the condenser at all, nor

(Testimony of Ford W. Harris.)

is there any means for maintaining [431] pressure, nor are there any floats in there for maintaining the level of the oil in the trap.

Q. (By Mr. F. S. LYON.) The separation in that trap, then, of the gas, is what might be termed to be in a body of oil, is it?

Mr. BAGG.—Now this is an intelligent witness, and I suggest that—

Mr. F. S. LYON.—All right. Your Honor has heard his testimony.

A. Defendant's Exhibit "F," which is the Taylor patent, is a steam separator. It has nothing to do with gas traps that I can see. The steam enters through a pipe 3a and flows down over a series of baffles, presumably the steam contains some water, and the steam is taken out from the very bottom of the trap through a passage 17 put out through a pipe 5. There is a float in the bottom for draining out the condensed water from time to time as it collects in the trap. There is no means for maintaining pressure on this trap, and it is not intended to separate gas and oil, and I question seriously whether it would separate gas and oil.

Defendant's Exhibit "G," being the Barker patent, shows a chamber into which the natural gas is blown through a pipe 5 and at the end of the pipe 5 has a hood or cap 7 over it, evidently intended to keep the gas from striking the top. It acts as a deflector plate and tends to throw any liquid that may be carried in the gas downwardly.

(Testimony of Ford W. Harris.)

There is no means of spreading the oil—in fact it is not intended there should be any great quantity of oil in this trap, which is, naturally, a gas trap. There is no means of spreading the oil on the wall of the chamber, no means of maintaining the pressure in the chamber, and there is no float valve for maintaining the oil level in the chamber.

Defendant's Exhibit "H," being the Bray patent, is a patent that I am quite familiar with as it was the principal [432] patent cited by the Patent Office when this case was prosecuted before the office and we had some difficulty with the Patent Office in connection with this patent. The difficulty with the Patent Office arose from the great similarity in external appearance between this trap and the Trumble trap. It is a cylindrical trap with a cone top and cone bottom, has a float in it, and there was an appearance of similarity which, after some discussion, we convinced the Patent Office was not a real similarity. The oil is introduced and passes through a series of screens and comes into the bottom of the trap. There is no means of spreading it in a thin film nor of maintaining any pressure inside of the trap. It is simply a sort of screening proposition.

Defendant's Exhibit "I," being the Cooper patent, shows a trap for operating on the centrifugal principle. I have quite recently had some experience with centrifugal separators for internal combustion engines which work on a somewhat similar order. I don't think this drawing is a correct

(Testimony of Ford W. Harris.)

representation, as it shows the liquid on the bottom on a level and quiescent. If the combined liquid and gas enters this separator with any degree of force there would be produced inside of the separator a vortex similar to that which we all observe—

Q. Take a sheet of paper and illustrate to the Court what you mean.

A. A vortex similar to that which we observe when we pull the plug out of a bathtub. Of course this would be a much more vertical vortex, but nevertheless it would be a vortex. In the sketch which I am making the fluid entering through a pipe marked "1" tangential shell tends to rotate the whole mass of material inside the shell—the gas and oil or anything there may be in there—in the form of a vortex, and a typical form of vortex, due to centrifugal action, [433] would be something similar to that which I will show by a line which I will mark "2," the shaded portion below that line representing the oil. In other words, the whole mass of material inside the trap would tend to be churned up, and it would tend to cling to the outside of the trap, this tendency becoming less as the material got deeper in the trap, so that we would have a whirlpool in there which would tend to throw the sand and the water toward its outer surface and the oil in the middle. I believe the action of the sand on this trap would be very destructive, from my observation of the wearing of nipples and pipes in wells that carry considerable sand. If the

(Testimony of Ford W. Harris.)

velocity of the oil and liquid entering this trap is low there would be no such vortex action, or a very slight one, but in that case the oil would simply be thrown in and would flow down inside the trap. Operated according to the patent, however, this condition that I show in my sketch would be the one that would obtain.

Mr. F. S. LYON.—The sketch produced by the witness is offered in evidence as Plaintiff's Exhibit 4.

A. (Continuing.) This patent shows no means for maintaining pressure inside the trap.

The next patent, Defendant's Exhibit "J," being the Noon patent, shows a water separator—a separator for taking gas from water. The fluid containing the gas enters the tops of the two chambers through pipes which are provided with nozzles g2, and these nozzles are pointed directly downwardly so that the fluid is driven down with considerable force. To break the force and prevent the liquid from being violently injected into the fluid in the bottom of the trap baffle-plates, k' and l', are provided in the two chambers. The purpose of these baffle-plates, as I believe the patentee says, is that "the hoods k' and l' preventing the gas from boiling up the water accumulated in [434] the bottom of the tank, thus preventing much spray and protecting the float 'm' from the incoming rush of gas." It is my opinion that while some of this water striking on top of these hoods may reach the wall of the tank, this trap was not in-

(Testimony of Ford W. Harris.)

tended or designed or used to effect the separation in this manner, because if that had been desired these hoods would simply have been placed up directly under the inlet and the inlet itself would have been placed higher. I think the only purpose and the only function of them is to prevent this boiling up and to protect the float as specified by the patentee.

Mr. F. S. LYON.—You may inquire.

Cross-examination.

(By Mr. BAGG.)

Q. Mr. Harris, you state in examining these various patents that you draw your conclusions as to their operation somewhat upon the intent of these various devices. Is that correct?

A. I don't think I so stated.

Q. Now in this last patent, the Noon patent, you spoke about the intent of these baffles.

A. The purpose of the baffles.

Q. Well, didn't you use the word "intent"?

A. It is possible that I did.

Q. Now you are basing your testimony, then, in a large measure upon what you understand to be the intent of these baffles and not what the actual effect would be?

A. I think I am basing it on what I think would be the result if the trap were constructed in that manner.

Q. But you do base your conclusions in a measure on [435] the intent as described in the specifications?

(Testimony of Ford W. Harris.)

A. Well, I don't know just exactly what you mean by that. I base my conclusions on what I consider would result if the trap were constructed in that way and what the patentee says in the specification as to what would result.

Q. Now, let us take Defendant's Exhibit "J," which is the Newman patent. If the water and gas should come in in a large flow in any kind of a head, as it came down through these nozzles as you might call them, the separators in the oil line, and struck upon these baffle-plates, they would strike with a splashing effect, would they not?

A. On the side of the container, yes.

Q. Yes, and producing a splashing effect upon these side-walls? A. Yes.

Q. And oil would do the same thing?

A. Yes.

Q. It would splash over here against the side-walls and flow down the side? A. Yes.

Q. Now these baffle-plates are more or less rectangular in shape, are they not, as shown here in the drawing?

A. Baffle-plate k' is rectangular because the Figure 4 shows it to be rectangular.

Q. Now that plate, then, if this was a cylindrical form, this outer shell, would have a space on each end of it which would be more or less vacant, would it not, that is, it would not be tied to anything that would deflect the coming in or going out of the oil or gas, would it? A. That is correct.

Q. So that there would be space in there for the

(Testimony of Ford W. Harris.)

gas to come up past the ends of these baffle-plates in there, wouldn't there? [436]

A. Yes, but it would have to come up through the mass of oil coming down.

Q. Now, if this struck this baffle-plate here the tendency would be just like that of water flowing on the roof of a house, would it not, it would flow down hill, and would it not flow over towards the sides of this receptacle? A. Yes.

Q. Then there would be a space up and down the ends of this baffle which would let the oil and gas come up that way, would there not?

A. I don't think so. I don't think it would allow any oil to come up there.

Q. Well, I mean gas. I beg pardon.

A. Some gas would come out—

Q. All the gas that was in the oil as it struck this plate and started down there, if it came out, would have to come out down in here (indicating), would it not? A. Yes.

Q. Now I will ask you to examine this Cooper patent, which is Defendant's Exhibit "I," and state if there is not a plate shown in this drawing across the wall or adjacent to the wall of the receptacle, against which this oil and sand is projected as it comes in. A. The plate a'.

Q. Yes; and that is evidently for the purpose of reinforcing this side-wall against wear, is it not?

A. Well, I don't know what the purpose of it is.

Q. Well, you would say it would, would you not?

A. It would help, certainly,—

(Testimony of Ford W. Harris.)

Q. Now, if that was made out of glazed material it would take it a long time to wear out, would it not? A. Yes.

Q. Now if the oil was coming into that trap in the same [437] manner and at the same speed that was illustrated at the test out at the plaintiff's plant the other day in the presence of the Court, flowing in practically the same size stream, there wouldn't be any vortex effect in that, would there?

A. Well, of course, it would depend upon the size of the tank.

Q. Well, if it was what you might call a reasonable, moderate size tank.

The COURT.—That plate is called a steel wearing plate.

Mr. BAGG.—Yes.

Q. A steel wearing plate would be, evidently, then, from your description, for the purpose of preventing wear on the side-walls of this receptacle?

A. Yes, sir. It is evident that the patentee understood that he would get wear there.

Q. Now I don't remember whether you answered my question with reference to that—probably the Court didn't hear you. If the oil was coming in through this Cooper trap at the same rate of speed that was illustrated out at the experiment the other day at the plant of the plaintiff there would not be any vortex such as you have described in that event, would there?

A. It depends entirely upon the size of the trap. You will have to define "reasonable size," Mr. Bagg.

(Testimony of Ford W. Harris.)

Q. Well, say it was three feet across.

A. The same diameter, approximately, as the one you had out there?

Q. Yes.

A. I don't know positively, but it would seem to me that that oil would come down in a very similar manner if it were arranged that way, but of course I don't consider that that is the way Cooper ever did it or that that is [438] the way that patent would work.

Q. Well, that is the way it is described anyway.

A. No, sir.

Q. Now as to "intended to work" you are coming back to the intention of the patentee; you are not testifying as to the structure as actually described?

A. I am coming back to his method of operation as described. He says it goes around by centrifugal force, and that it flows down in films as it goes down this trap.

Q. Yes, it would have to flow down some place, would it not? It couldn't keep going round and round.

A. It goes around long enough to form this vortex.

Q. But if it was coming in at the slow rate it was coming in at the other day it wouldn't have that vortex effect, would it?

A. If the trap were made of this size and according to these specifications and the oil was flowing in at a suitable rate I would say the oil would go down over the wall of the trap here, the same as in Mr.

(Testimony of Ford W. Harris.)

Lorraine's trap, but I don't think this patent was intended to or ever did work that way, this particular trap.

Q. Well, that is just your opinion?

A. Well, no; I am going by what it said in the patent. It says: "The material was thereby given a rotary motion which separates the constituents conformably to their specific gravity." Now if that goes in there fast enough to form a centrifugal motion automatically it goes in at a high speed.

Q. Yes, but that would depend altogether on the well to which it was attached, as to whether it flowed rapidly or produced largely or not, would it not?

A. I don't think so. I think it is the size and construction of the trap. [439]

Q. Well, I am speaking about a three foot trap such as the Lorraine patent. It would depend altogether on the character of the flow of that oil from that particular oil well, would it not?

A. As applied to a well producing say one thousand or fifteen hundred barrels a day?

Q. Approximately, yes.

A. Approximately the amount this well was flowing.

Q. Such as the witness has described.

A. Well, I think it might work very much the same way.

Q. Now all oil and gas wells do not produce a large quantity of sand, do they? A. No.

Q. Some of them don't produce hardly any sand, do they?

(Testimony of Ford W. Harris.)

A. In a great many of them the oil is very clean.

Q. So that it would be only in those cases where there was a large amount of oil and the flow was very violent that there would be any material wear upon the—

A. No, I wouldn't say that. I say it is wholly dependent upon the sand and the character of the sand.

Q. And the amount too, is it not?

A. And the amount.

Q. You have never had any experience in watching the interior workings of these traps, have you?

A. No, except what I had out there the other day.

Mr. BAGG.—That is all.

Mr. F. S. LYON.—That is all. Plaintiff rests.

Mr. BAGG.—Defendant rests.

(Discussion *re* time for arguments and filing of brief.)

Mr. F. S. LYON.—I believe that new act is not in effect yet, is it, in regard to Judges from outside districts signing orders and entering decrees and so forth? I think, Mr. Bagg, we had better have a stipulation that Judge Wolverton may sign decrees, hear petitions for rehearing, [440] etc., in this case outside of the district with the same effect as though it were done here.

The COURT.—And after the expiration of the designated time—

Mr. F. S. LYON.—Yes, with the same force and

effect as though duly designated and personally present within the district.

Mr. BAGG.—Yes.

The CLERK.—Will you file a written stipulation to that effect?

The COURT.—The Court will take a recess until two o'clock.

(A recess was thereupon taken until two o'clock P. M.) [441]

AFTERNOON SESSION—Two o'clock.

(Discussion *re* arguments.)

Mr. F. S. LYON.—Before starting the argument, your Honor, I wish to submit for ruling hereafter a motion I now make to strike from the record and exclude from consideration Defendant's Exhibit "C," upon each of the grounds stated in the objection to the exhibit, and upon the further ground that this printed copy, if it is a copy, is not admissible without certification; that it is a private document and not a public document, and that there is no proof of it.

Now in that connection I also call your Honor's attention to the fact that, so far as the so-called Tico trap is concerned, there is no assertion of date for the Tico trap in any manner in the publication; and the same publication shows the Trumble gas trap, and it has nothing in it to show which was prior in point of time; and I will submit in our brief our authorities such as we have been able to find which bear upon the subject, calling your Honor's attention particularly to the statute which is the

statute of organization of the Bureau of Mines and to the fact that that statute does not in any manner particularly make evidence any copy such as this, and there is no provision in that statute which makes any of its investigations or anything of that kind evidence, and it would depend solely upon the applicability of the doctrine of public documents; and I call your Honor's attention in that connection to the fact that there is no proof here that there is an original document filed by an officer whose duty it was to compile this, or any of the other requirements, and to the fact that the procedure in that connection is to require proof in certified form of all those documents.

The COURT.—The Court will take the matter under advisement, to be determined later on in the case when it is finally submitted. [442]

Mr. F. S. LYON.—And whichever way the ruling is it will be understood we are reserving exceptions on behalf of the parties.

The COURT.—Yes.

(Final Argument.)

[Endorsed]: In the District Court of the United States for the Southern District of California. (Before Hon. Charles E. Wolverton, Judge.) Francis M. Townsend et al., Plaintiff, vs. David G. Lorraine, Defendant. No. E-113—Equity. Reporter's Transcript. Vol. V. Filed Apr. 7, 1922. Chas. N. Williams, Clerk. By R. S. Zimmerman, Deputy Clerk. Los Angeles, California, March 28, 1922. Reported by J. P. Doyle. Doyle & St. Maurice, Shorthand Reporters and Notaries Suite,

507 Bankitaly International Building, Los Angeles,
California, Main 2896. [443]

In the District Court of the United States, South-
ern District of California, Southern Division.

No. E-113.

FRANCIS M. TOWNSEND, MILON J. TRUM-
BLE and ALFRED J. GUTZLER, Doing
Business Under the Firm Name of TRUM-
BLE GAS TRAP CO.,

Plaintiffs,

vs.

DAVID G. LORRAINE,

Defendant.

Opinion.

FREDERICK S. LYON, LEONARD S. LYON and
FRANK L. A. GRAHAM, for Plaintiffs.

CHARLES BAGG, for Defendant.

WOLVERTON, District Judge:

Complainants are the rightful owners of a patent on a crude oil and natural gas separator, No. 1,269,134, issued June 11, 1918, application for which was filed November 14, 1914, and claim that the same has been infringed by defendant's reissue patent of November 8, 1921, No. 15,220, and an apparatus recently constructed of somewhat similar design. The defendant does not question the validity of complainant's patent, but claims that he does

not infringe, for two reasons: First, that complainants are estopped, by reason of the proceeding before the Patent Examiner, from claiming any other means than that which spreads the whole of the incoming oil, gas, water and sand upon the walls of an expansion chamber in a thin film; and, second, that in view of the state of the art at the date of complainants' patent, they are precluded from claiming any other form of structure than that set out and described in the drawings and specifications accompanying such application.

The claims of complainants' patent which it is thought have been infringed are 1, 2, 3, 4, and 13. The first claim reads: [444]

“In an oil and gas separator, the combination of an expansion chamber arranged to receive oil and gas in its upper portion, means for spreading the oil over the wall of such chamber to flow downwardly thereover, gas take-off means arranged to take off gas from within the flowing film of oil, an oil collecting chamber below the expansion chamber, an oil outlet from said collecting chamber, and valve controlled means arranged to maintain a submergence of the oil outlet.”

Claim 2 varies from claim 1, so far as it is necessary to indicate, in that it comprises “means within the chamber adapted and arranged to distribute the oil over the wall of the chamber in a downwardly flowing film, gas take-off means arranged to take gas from within the envelop of

downwardly flowing oil, and means for maintaining gas pressure upon such oil."

So of claim 3: "The combination of an expansion chamber having a surface adapted to sustain a flow of oil thereover in a thin body, means for distributing oil on to such surface, pressure-maintaining means arranged and adapted to maintain a pressure on one side of the flowing oil;" and of 4: "Means for maintaining pressure within the chamber, * * * means within the chamber adapted to cause the oil to flow in a thin body for a distance to enable the gas contained and carried thereby to be given off while the oil is subjected to pressure." Claim 13 includes "an imperforate spreader cone, having its apex pointing upwardly, located inside said chamber in such a manner as to spread a thin film of oil over the inner wall of said chamber."

Turning to the file-wrapper showing the proceedings before the examiner, claim 1 as made in the application contains the element "means for reducing the oil into a finally divided condition to reduce the tension on the gas contained therein." Claim 2, "Oil dividing means arranged in the expanding chamber to reduce the oil to a thin film-like condition." Claim 3, "gas freeing means consisting of means to reduce the oil to a thin film arranged within the expanding chamber;" and claim 4, "A cone arranged near the top of such chamber to receive the incoming oil and spread it over the wall of the chamber in a thin film-like form." [445]

When the application came to the examiner, claims 1, 2 and 3 were each rejected on the application on the patents of Barker and Bray, and 4 on patent of Bray. The action of the examiner induced the petitioner to add the following to his specifications:

“It will be noted that the action upon the oil while flowing down the wall of the expansion chamber in a thin film under pressure permits the free, dry gas to readily escape therefrom, while the pressure exerted upon the oil surface backed by the wall of the chamber holds the lighter liquids, such as gasoline, in combination with the oil body, and I desire to be understood as pointing out and claiming this action as being of great benefit to the crude oil derived from the well on account of keeping the gasoline series in combination with the main body of oil.”

Also to cancel claims 1, 2, and 3, and to insert claims 1, 2, 3, and 4 as now contained in the issued patent.

The examiner again rejected claims 1 to 4 inclusive, on patent of Bray, and 5 to 13, inclusive, were held not to patentably distinguish from Bray, and accordingly were rejected. In response to these objections, the applicant added claims 13 and 14 as now contained in the patent. As presented, the examiner again rejected claims 14 and 15, being claims 13 and 14 in patent, also claims 1 to 13, inclusive, as not to patentably distinguish from references of record. The applicant replied to the

action of the examiner, stating, among other things, that the "applicant's invention consists of a containing vessel, an imperforate cone adapted to spread the whole body of the oil to the outer edge of the vessel, and means for taking off gas from the interior of the cone near the center of the vessel"; this to distinguish from the Bray patent. He says, further: "Moreover Bray does not take off his gas below his screens, and the claims of Trumble are quite specific in stating that the gas is taken off inside the cone."

The matter coming again before the examiner, on reconsideration, all the claims were allowed as contained in the patent. Claim 9 (original claim 8) was rejected as met by patent of Bray, and has been eliminated from the patent. [446]

A patentee, where he is required by the rulings of the Patent Office to modify and restrict his claims, to obviate anticipation by previous patents, is by the limitations he thus imposes upon such claims, and where the patent is for a combination of parts, his claims must be limited to a combination of all the elements which he has included in his claims as necessarily constituting that combination. *Phoenix Caster Co. vs. Spiegel*, 133, U. S. 360, 368; *New York Asbestos Mfg. Co. vs. Ambler Asbestos A. C. Co.*, 103 Feb. 316. And it was said in *Roemer vs. Peddie*, 132 U. S. 313, 317:

"When a patentee, on the rejection of his application, inserts in his specification, in consequence, limitations and restrictions for the purpose of obtaining his patent, he cannot, after

he has obtained it, claim that it shall be construed as it would have been construed if such limitations and restrictions were not contained in it."

See, also, *National Hollow Brake-Beam Co. vs. Inter-changeable Brake-Beam Co.*, 106 Fed. 693, 714, where the Court adds:

"But this is the limit of the estoppel. One who acquiesces in the rejection of his claim because it is said to be anticipated by other patents or references is not thereby estopped from claiming and securing by an amended claim every known and useful improvement which he has invented that is not disclosed by those references."

Two thoughts were uppermost with the patentee in making the changes indicated: First, to avoid the objection with reference to Barker and Bray with means for reducing the oil into a finely divided condition; and, second, to confine the oil in its flow down a wall or surface with maintained pressure meanwhile. The theory of the patentee is obviously that, pressure being maintained, the dry gas will readily escape from a thin film or body of oil passing down and against a wall or other surface, without at the same time taking off the lighter liquids, such as gasoline, which will yet remain in the crude oil and add to its value.

The limitation and restriction which the patentee has imposed upon his patent must be gathered from his addition to his specifications and the claims which were finally approved by the examiner. He

says in the added specifications that the free, dry gas readily escapes, while the pressure exerted upon the oil surface, backed by the wall of the chamber, holds the lighter liquids in the oil body. In his claims, however, he asserts a broader scope for his [447] invention, as in claim 3, which comprises "the combination of an expansion chamber having a surface adapted to sustain a flow of oil thereover in a thin body, means for distributing oil on to such surface, pressure-maintaining means arranged and adapted to maintain pressure on one side of the flowing oil." All this was approved and allowed by the examiner.

Construing the whole together, the added specifications and the claims, I am impressed that the patentee is not confined to means of causing the oil to flow down the outer wall of the chamber, but that his patent includes any means that will cause the oil to flow down any surface as well, such as a baffle-plate or inner partition or wall, which is reached after the emulsified oil enters the chamber. I think therefore, the patentee is not estopped by the proceedings before the Patent Office to insist upon the broader claims.

Now, as to the state of art: Defendant makes no question as to the validity of complainants' patent, and does not rely upon any anticipation for defeating it. The point he makes, therefore, as to what must be accomplished by a combination device would seem to be irrelevant. The question remains, Are the elements of complainants' device so restricted, in view of the state of the art, as to subject them

to so narrow a construction as to limit them to the very means shown by the drawings and specifications in patent?

The complainants' patent contains a cone device near the top of the upper chamber, with its lower rim extending in its full circumference in close proximity with the wall of the chamber, with no gas take-off above the cone, so that the entire emulsified body flows down a wall; the gas to be taken off below the cone. Defendant's patent, referred to in counsel's brief as Model 1, has an inner partition set away from the wall on one side more than one-third the distance of the diameter of the chamber, and extending below the oil level. To this partition, at some distance from the top of the chamber, is attached a baffle-plate extending downward on an incline of perhaps 45 degrees, and to within an inch and a half or two inches from the wall for the entire segment [448] cut off by the partition. The oil inlet, consisting of a pipe, extends downward to within a short distance of a baffle-plate. The pipe has two openings, so that the stream of oil is divided and projected on the baffle-plate in two directions laterally. The device is provided with a gas take-off above the partition and one from underneath the baffle-plate; all to pass off eventually from the upper portion of the major chamber.

Model 2 contains a like partition to that described in Model 1. The oil inlet consists of a pipe extending into the side of the minor chamber, supplied with what is called a nipple, bell-shaped, to allow the oil to spread when discharged into the chamber.

The nipple is set at an angle with and extended within proximity of the inner wall, the effect of which is, when the oil is discharged into the chamber, to carry part of it down the inner partition wall, part down the outer wall, at and near the intersection of the inner with the outer wall, and part of it down by gravity without reaching either wall. The device is provided with a gas take-off above the nipple.

This sufficiently describes the models to make the application later. I may add further that the nipple in the model in evidence is machined off on one side to sit closely against the partition wall. Defendant says this was done through mistake in setting the nipple, the machine having allowed it to extend too far inwardly. If this is true, it only shows how easy it is to set the nipple in without discovery. But we are dealing with the model in evidence, which complainants say infringes their patent.

The patents introduced as showing the prior art are readily disposed of. Exhibits "E," the McIntosh patent, "F," the Taylor patent, "G," the Barker patent, and "J," the Newman patent, all inject the oil from the well in the form of a spray, having the effect to reduce it to a finely divided condition, and the gas is thus permitted to escape. None of them are provided with baffle-plates except Newman, but the oil does not reach them except as sprayed upon them, and I think none of these patents contain the element in combination of pressure within the chamber. All these patents

are obviated in their evidentiary effect by the restrictions of [449] complainants' specifications and claims as made before the examiner. Exhibit "H," the Bray patent, is subject to the same criticism. The oil is there precipitated upon perforated cones, and only slightly, if at all, flows down the wall of the chamber or other surface. Exhibit "I," the Cooper patent, injects the crude oil tangentially to the wall of the chamber, and causes it to flow down the wall more or less, and the gas escapes upwardly and passes out in a take-off at the top of the chamber. But this patent in combination contains no element of pressure. It must be observed that we are dealing with a combination patent, and all the elements must be read with reference thereto.

Trout, in his testimony and by a drawing submitted by him, exhibits a trap having a chamber into which the oil is injected tangentially to the outer wall, but provided with a sleeve, which allows the gas to escape upward from a segment at the upper part of the sleeve, and baffle-plates are provided above, which can only have the effect to deflect the gas as it passes upwardly and thence outwardly by the gas outlet. This trap, as described, had the element of pressure. The testimony is not persuasive, however, as no drawings were presented, although, as witness testifies, some of them are in existence. The device was called the Durward trap, after the superintendent of the property, who constructed the trap. Durward himself was

not called, although accessible. The trap was never patented, and fell into disuse.

In *Parker vs. Stebler*, 177 Feb. 210, it is laid down that:

“The Courts have recognized the rule that oral testimony of witnesses speaking from memory only in respect to past transactions and old structures claimed to anticipate a patented device, physical evidence of which is not produced, is very unreliable, and that it must be so clear and satisfactory as to convince the Court beyond a reasonable doubt before it will be accepted as establishing anticipation.”

See, also, *Diamond Patent Co. vs. S. E. Carr Co.*, 217 Fed. 400, 402.

The testimony of Swoap and of Wharff is subject to the same criticism.

Respecting Exhibit “C,” which is a pamphlet entitled “Traps for Saving Gas at Oil Wells,” written by W. R. Hamilton, it was issued by the Bureau of Mines, at the Government Printing Office, in 1919, and treats largely of traps for separating gas from oil, and by [450] illustration presents many traps, from the most primitive to the more complex and modern; some having the element of pressure in combination. The document is not certified as official. The statements it contains in regard to the elements of the traps exhibited lack the solemnity of an oath, and the opposing party is deprived of the opportunity of cross-examination. I was inclined to admit this document as competent evidence at the trial, and did admit it

subject to further consideration. I am now convinced, however, that the document is not admissible. If admissible, it could have no greater weight than the testimony of a witness speaking to the facts therein narrated, and could not be of compelling force, under the rule announced by the two authorities last above cited.

It is argued that the principle of subjecting oil to pressure, for the purpose of keeping lighter hydrocarbons in solution in the oil while the dry gas constituent separates from the body of the oil, is old, but this overlooks the theory of complainants that they have discovered a more efficient way of separating the gas from the oil, whereby a greater proportion of oil value is secured than had theretofore been derived by the use of any trap in existence or previously operated. Utility has been abundantly proven by the success achieved by complainants' device.

The defendant's trap, Model No. 1, infringes, in that the baffle-plate furnishes a surface down which the oil flows, with pressure against the oil, by which the gas escapes from the oil and passes out of the chamber by the take-off. So of defendant's device, Model 2, the oil is injected in part at least, against the partition, as well as against the chamber wall, so that it flows down thereon with pressure on the moving oil, from which the gas escapes. While part of the oil is reduced to a spray which falls by gravity to the settled fluid below, its action does not obviate the objectionable feature of a part flowing down the partition and a part down the

wall. I am of the opinion also that defendant's trap will likewise infringe with the nipple constructed, as he claims it should be, according to drawings and specifications. [451]

I find that defendant's patent infringes claims 3 and 4 of complainants' patent, that his Model No. 2 infringes claims 1 to 4, inclusive, and that claim 13 is not infringed. Complainants will have a decree accordingly, and the cause will be continued for an accounting.

[Endorsed]: No. E-113. U. S. District Court, Southern District of California. F. M. Townsend et al. vs. David G. Lorraine. Opinion of Judge Wolverton. Filed Sep. 11, 1922. Chas. N. Williams, Clerk. By R. S. Zimmerman, Deputy Clerk. [452]

United States District Court, Southern District of
California, Southern Division.

IN EQUITY—No. E-113.

FRANCIS M. TOWNSEND, MILON J. TRUM-
BLE and ALFRED J. GUTZLER, Doing
Business Under the Firm Name of TRUM-
BLE GAS TRAP CO.,

Plaintiffs,

vs.

DAVID G. LORRAINE,

Defendant.

Interlocutory Decree.

This cause having heretofore come on regularly to be heard and tried in open court before United States District Judge Charles E. Wolverton, upon the proofs, documentary and oral, taken and submitted in the case and being of record therein, the plaintiffs being represented by Messrs. Frederick S. Lyon, Leonard S. Lyon and Frank L. A. Graham, and the defendant by Charles Bagg, Esq., and the case having been submitted on briefs to the Court for its consideration and decision, and the Court being now fully advised in the premises, and its opinion having been rendered and filed herein,

IT IS HEREBY ORDERED, ADJUDGED AND DECREED as follows:

1. That plaintiffs Francis M. Townsend, Milon J. Trumble and Alfred J. Gutzler, doing business under the firm name of Trumble Gas Trap Co., are the rightful owners of the United States letters patent No. 1,269,134, granted on June 11, 1918, to them, for a certain new and useful invention, to wit, a Crude Oil and Natural Gas Separator, and that the validity of said patent was not denied or put in issue by defendant in the above case; that said letters patent are good and valid in law, particularly as to [453] claims 1, 2, 3 and 4 thereof, which said claims are as follows:

“1. In an oil and gas separator, the combination of an expansion chamber arranged to

receive oil and gas in its upper portion, means for spreading the oil over the wall of such chamber to flow downwardly thereover, gas take-off means arranged to take off gas from within the flowing film of oil, an oil collecting chamber below the expansion chamber, an oil outlet from said collecting chamber, and valve controlled means arranged to maintain a submergence of the oil outlet.

“2. In an oil and gas separator, the combination of an expansion chamber, inlet means arranged to permit the entrance of oil and gas into the chamber, means within the chamber adapted and arranged to distribute the oil over the wall of the chamber in a downwardly flowing film, gas take-off means arranged to take gas from within the envelop of downwardly flowing oil, means for maintaining gas pressure upon such oil.

“3. In an oil and gas separator, the combination of an expansion chamber having a surface adapted to sustain a flow of oil thereover in a thin body, means for distributing oil on to such surface, pressure-maintaining means arranged and adapted to maintain a pressure on one side of the flowing oil, withdrawing means arranged to take gas from the chamber, and means for withdrawing oil from the chamber.

“4. In an oil and gas separator, the combination of an expansion chamber, means for delivering oil and gas into the chamber, means for maintaining pressure within the chamber,

means for drawing oil from the chamber, and means within the chamber adapted to cause the oil to flow in a thin body for a distance to enable the gas contained and carried thereby to be given off while the oil is subjected to pressure.”

2. That defendant has infringed upon claims, 1, 2, 3 and 4 of plaintiff's patent No. 1,269,134, by making and causing to be made, and selling and causing to be sold, and causing to be used, apparatus embodying the invention patented in and by the said respective claims 1, 2, 3 and 4 of plaintiff's patent aforesaid, and that the apparatus made and sold by defendant referred to in this case as Defendant's Model No. 1, and described in reissued letters patent of the United States, No. 15,220 granted [454] November 8, 1921, to defendant, infringes upon said claims 3 and 4 of plaintiff's said patent, and that the apparatus made and sold by defendant referred to in this case as Defendant's Model No. 2, infringes upon said claims 1, 2, 3 and 4 of plaintiff's said patent both when made with the nipple machined off on one side to sit closely against the partition wall as illustrated in said Model No. 2, and when made without such machining or setting, as defendant claims such device was intended to be constructed; and that defendant has not infringed upon claim 13 of plaintiff's patent.

3. That defendant, his agents, servants, employees, confederates, attorneys and associates, and each and every of them, be and they are, and each of them is, hereby permanently enjoined and re-

receive oil and gas in its upper portion, means for spreading the oil over the wall of such chamber to flow downwardly thereover, gas take-off means arranged to take off gas from within the flowing film of oil, an oil collecting chamber below the expansion chamber, an oil outlet from said collecting chamber, and valve controlled means arranged to maintain a submergence of the oil outlet.

“2. In an oil and gas separator, the combination of an expansion chamber, inlet means arranged to permit the entrance of oil and gas into the chamber, means within the chamber adapted and arranged to distribute the oil over the wall of the chamber in a downwardly flowing film, gas take-off means arranged to take gas from within the envelop of downwardly flowing oil, means for maintaining gas pressure upon such oil.

“3. In an oil and gas separator, the combination of an expansion chamber having a surface adapted to sustain a flow of oil thereover in a thin body, means for distributing oil on to such surface, pressure-maintaining means arranged and adapted to maintain a pressure on one side of the flowing oil, withdrawing means arranged to take gas from the chamber, and means for withdrawing oil from the chamber.

“4. In an oil and gas separator, the combination of an expansion chamber, means for delivering oil and gas into the chamber, means for maintaining pressure within the chamber,

means for drawing oil from the chamber, and means within the chamber adapted to cause the oil to flow in a thin body for a distance to enable the gas contained and carried thereby to be given off while the oil is subjected to pressure.”

2. That defendant has infringed upon claims, 1, 2, 3 and 4 of plaintiff's patent No. 1,269,134, by making and causing to be made, and selling and causing to be sold, and causing to be used, apparatus embodying the invention patented in and by the said respective claims 1, 2, 3 and 4 of plaintiff's patent aforesaid, and that the apparatus made and sold by defendant referred to in this case as Defendant's Model No. 1, and described in reissued letters patent of the United States, No. 15,220 granted [454] November 8, 1921, to defendant, infringes upon said claims 3 and 4 of plaintiff's said patent, and that the apparatus made and sold by defendant referred to in this case as Defendant's Model No. 2, infringes upon said claims 1, 2, 3 and 4 of plaintiff's said patent both when made with the nipple machined off on one side to sit closely against the partition wall as illustrated in said Model No. 2, and when made without such machining or setting, as defendant claims such device was intended to be constructed; and that defendant has not infringed upon claim 13 of plaintiff's patent.

3. That defendant, his agents, servants, employees, confederates, attorneys and associates, and each and every of them, be and they are, and each of them is, hereby permanently enjoined and re-

strained from making, using, or selling, or causing to be made, used or sold, any device or apparatus embodying or containing the invention described and claimed in and by the said claims 1, 2, 3 and 4 of plaintiff's patent No. 1,269,134, and either or any of said claims, and from infringing upon and from contributing to the infringement of said claims, or either of them, and that a permanent Writ of Injunction issue out of and under the seal of this Court, commanding and enjoining said defendant, his agents, servants, employees, confederates, attorneys and associates, and each of them, as aforesaid.

4. That the plaintiffs have and recover of and from the said defendant David G. Lorraine, the profits which said defendant has realized and the damages which plaintiffs have sustained, from and by reason of the infringement aforesaid; and for the purpose of ascertaining and stating the amount of said profits and damages this cause is hereby referred to Honorable Charles C. Montgomery, Esq., as Special Master, *pro hac vice*, to ascertain, take, state and report to this Court an account of [455] all the profits received, realized or accrued by or to the defendant, and to assess all the damages suffered by the plaintiffs from and by reason of the infringement aforesaid, and that on said accounting the plaintiffs have the right to cause an examination of the respective agents, servants, employees, confederates, attorneys and associates, and each of them, *ore tenus*, and also be entitled to the production of the books, vouchers, documents

and records of the defendant, his agents, servants, employees, confederates, attorneys and associates, and each of them, in connection with the accounting, and that the said defendant, his agents, servants, employees, confederates, attorneys, and associates, and each of them, attend for such purpose before the Master from time to time as the master shall direct.

5. That the plaintiffs have and recover their costs and disbursements in this suit to be hereafter taxed, and that plaintiffs have the right to apply to the Court from time to time for such other and further relief as may be necessary and proper in the premises.

Costs taxed favor plff. at \$43.70.

Dated: Los Angeles, California, September 26, 1922.

CHAS. E. WOLVERTON,

United States District Judge.

Approved as to form as provided in Rule 45.

Attorney for Defendant.

Decree entered and recorded September 29, 1922.

CHAS. N. WILLIAMS,

Clerk.

By Louis J. Somers,

Deputy Clerk. [456]

[Endorsed]: No. E-113. United States District Court, Southern District of California, Southern Division. Francis M. Townsend et al., Plaintiffs, vs. David G. Lorraine, Defendant. In Equity. Interlocutory Decree. Filed September 29, 1922.

Chas. N. Williams, Clerk. By Louis J. Somers, Deputy. Lyon & Lyon, Frederick S. Lyon, Leonard S. Lyon, 312 Stock Exchange Building, Los Angeles, Cal., Attorneys for Plaintiffs. [457]

In the District Court of the United States, Southern District of California, Southern Division.

E-113—IN EQUITY.

FRANCIS M. TOWNSEND, MILON J. TRUMBLE and ALFRED J. GUTZLER, Doing Business Under the Firm Name of TRUMBLE GAS TRAP COMPANY,
Plaintiff,

vs.

DAVID G. LORRAINE,
Defendant.

Petition for Appeal.

To the Honorable BENJAMIN F. BLEDSOE, District Judge:

The above-named defendant feeling aggrieved by the decree rendered and entered in the above-entitled cause on the 29th day of September, A. D. 1922, does hereby appeal from said decree to the United States Circuit Court of Appeals for the Ninth Circuit, for the reason set forth in the assignment of errors filed herewith and he pays that this appeal be allowed and that citation be issued as provided by law, and that a transcript of the record, proceedings, and papers and documents

upon which said decree was based, duly authenticated be sent to the United States Circuit Court of Appeals for the Ninth Circuit under the Rules of such court in such cases made and provided; and your petitioner further prays that the proper order relating to the required security to be required of him be made.

WESTALL & WALLACE.

By JOSEPH F. WESTALL,

Solicitors and Counsel for Defendant. [458]

In the District Court of the United States, Southern District of California, Southern Division.

E-113—IN EQUITY.

FRANCIS M. TOWNSEND, MILON J. TRUMBLE and ALFRED J. GUTZLER, Doing Business Under the Firm Name of TRUMBLE GAS TRAP COMPANY,
Plaintiff,

vs.

DAVID G. LORRAINE,

Defendant.

Assignment of Errors.

Now comes the defendant in the above-entitled cause and files the following assignment of errors upon which he will rely upon his prosecution of the appeal in the above-entitled cause, from the decree made by this honorable court on the 29th day of September, 1922.

I.

That the United States District Court for the Southern District of California erred in decreeing that the letters patent No. 1,269,134, granted June 11, 1918, to Milon J. Trumble, assignor of one-third to Francis M. Townsend and one-third to Alfred J. Gutzler, covered or were for a new and useful invention, or in any respect or at all involved invention in the subject matter of any of its claims, or that such subject matter had patentable utility over the prior art sufficient to sustain a finding of invention. [459]

II.

That the United States District Court for the Southern District of California erred in decreeing that the validity of said letters patent No. 1,269,134, granted June 11, 1918, to plaintiffs, was not denied or put in issue by defendant herein.

III.

That the United States District Court for the Southern District of California erred in decreeing that said letters patent No. 1,269,134, granted on June 11, 1918, to plaintiffs herein, are or were good and valid in law in any respect and particularly erred in finding that said letters patent were valid as to claims 1, 2, 3, and 4 thereof.

IV.

That the United States District Court for the Southern District of California erred in decreeing that defendant had infringed upon claims 1, 2, 3, and 4 of said letters patent No. 1,269,134, by making and causing to be made, and selling and causing to

be sold, and causing to be used apparatus embodying the alleged invention patented in and by said respective claims 1, 2, 3, and 4 of said letters patent, and in finding and decreeing that any act of making or causing to be made, or selling or causing to be sold, or using or causing to be used, constituted infringement of said letters patent or any of the claims thereof.

V.

That the United States District Court for the Southern District of California erred in decreeing that certain apparatus made and sold by defendant referred to in this cause as Defendant's Model No. 1, and said to be described in reissued letters patent of the United States No. 15,220, granted November 8, 1921, to defendant, infringes upon said claims 3 and 4 of [460] said letters patent.

VI.

That the United States District Court for the Southern District of California, erred in finding and decreeing that certain apparatus made and sold by defendant referred to in this cause as Defendant's Model No. 2 infringes upon claims 1, 2, 3, and 4 of plaintiffs' said patent, or upon any of those claims, either when made with the nipple machined off on one side to sit closely against the partitioned wall as illustrated in said Model No. 2 or when made without such machining or setting, as defendant claims said device was intended to be constructed.

VII.

That the United States District Court for the

erred in decreeing that plaintiffs have and recover their costs and disbursements in said suit to be taxed.

XIV.

That the United States District Court for the Southern District of California, Southern Division, erred in failing to find and decree that said cause should be dismissed for want of equity at plaintiffs' cost, and that this defendant should have and recover his costs and disbursements herein expended.

XV.

That the United States District Court for the Southern District of California, Southern Division, erred in failing and refusing to find and decree that said letters patent No. 1,269,134, granted on June 11, 1918, to plaintiffs was not null and void in law for want of patentable invention over the prior art.

XVI.

That the United States District Court for the Southern District of California, Southern Division, erred in failing to find and decree that said letters patent No. 1,269,134, granted on June 11, 1918, contains nothing more than an aggregation of old and well known parts and features, and did not involve or contain a patentable combination.

XVII.

That the United States District Court for the Southern District of California, Southern Division, erred in failing and refusing to find and decree that any differences in construction or in associa-

tion of means and devices described and claimed in said letters patent No. 1,269,134, were not sufficiently different from similar and identical devices of the prior art or different [463] in their operative effect to constitute the subject matter of said letters patent in suit of sufficient usefulness to sustain the grant of a valid patent.

XVIII.

That the United States District Court for the Southern District of California, Southern Division, erred in failing and refusing to find and decree that if said patent No. 1,269,134, granted June 11, 1918, and the claims thereof, were not construed with extreme strictness in the light of the specification and drawings of said letters patent and confined in interpretation to the exact, or substantially exact form of the means for spreading the oil in a thin film and taking off the gas, the claims of said letters patent could not be held valid in view of the prior art.

XIX.

That the United States District Court for the Southern District of California, Southern Division, erred in failing and refusing to find and decree that said letters patent, or any of the claims thereof, could not be given an interpretation broad enough to find infringement by making, using, or selling of any of the devices by defendant made, sold, or used without being anticipated and void in view of the prior art introduced in evidence.

XX.

That the United States District Court for the

Southern District of California, Southern Division, erred in finding that the patentees in said letters patent No. 1,269,134, granted June 11, 1918, are not confined to means causing the oil to flow down the outer wall of the chamber, but that their patent includes any means that will cause the oil to flow down any surface as well, such as a baffle-plate or inner partition of the wall, which is reached after the emulsified oil enters [464] the chamber, and in finding that said patentees are not estopped by the proceedings before the patent office to insist upon a broad interpretation of their claims.

XXI.

That the United States District Court for the Southern District of California, Southern Division, erred in finding, as to the showing of the prior art, that Exhibits "E," the McIntosh patent, "F," the Taylor patent, and "J," the Newman patent, all inject the oil from the well in the form of a spray having the effect to reduce it to finally divided condition, in that none of these patents spray in the oil from the well in a finally divided condition, but all flow the oil in in a manner like that of the patent in suit.

XXII.

That the United States District Court for the Southern District of California, Southern Division, erred in finding that Exhibit "E," McIntosh patent and Exhibit "F," the Taylor patent, are not provided with baffle-plates.

XXIII.

That the United States District Court for the

Southern District of California, Southern Division, erred in finding or "thinking" (as it is expressed in the opinion) that only one of the patents introduced in evidence contains the element of pressure in combination with other elements within the chamber, in that the fact is that all the patents and particularly the nearest reference repeatedly emphasized such element of pressure within the chamber.

XXIV.

That the United States District Court for the Southern District of California, Southern Division, erred in finding that all of the patents introduced in evidence to show the prior art, were obviated in their evidentiary effect by restrictions of [465] complainants' specification and claims as made before the Examiner, in that, said letters patent in suit contains no limitations or restrictions, nor does the language of the claims differentiate the device of the patent in suit from several of those referred to and discussed by the Court.

XXV.

That the United States District Court for the Southern District of California, Southern Division, erred in failing and refusing to decree that Exhibit "I," the Cooper patent, is a complete anticipation of the claims in suit and which were sustained by the Court, unless the language of said claims are held to apply strictly to the means shown and described in the specifications and drawings, and in finding that said Cooper patent is to be differentiated from the subject matter of

the claims sustained by said District Court, because said Cooper patent in combination contains no element of pressure, when as a matter of fact, Cooper repeatedly and distinctly says that the element of pressure is incident to and part of the intended mode of operation of his device.

XXVI.

That the United States District Court for the Southern District of California, Southern Division, erred in finding that the testimony of Trout as to a certain prior art trap was not persuasive and was not sufficiently corroborated, and in finding that evidence to show the state of the art (as distinguished from anticipation) should establish such state of the art beyond a reasonable doubt.

XXVII.

That the United States District Court for the Southern District of California, Southern Division, erred in ruling Exhibit "C," not admissible as evidence, and not of great weight as evidence, and not as of compelling force, under the strict [466] rule as to the weight of evidence to establish an anticipation, said Exhibit "C" having been introduced in evidence to show the state of the art on the question of invention and construction of the claims in suit.

XXVIII.

That the United States District Court for the Southern District of California, Southern Division, erred in finding, or assuming that there is any evidence in the record by which utility of the subject matter of the claims in suit or any of them

could be held to be “abundantly” or in any respect proven, in that there is no evidence comparing any alleged advantages of the structures of the prior art with that of the patent in suit, or setting forth or proving any facts relating to such prior art, oil and gas separators, by which such comparison could be made or upon which it could be predicated.

XXIX.

That the United States District Court for the Southern District of California, Southern Division, erred in finding that *that* the success achieved by plaintiffs’ device is evidence of utility over the prior art, in that the prior art devices might have equal or greater advantages to that of the device of the patent in suit, so far as the evidence discloses.

XXX.

That the United States District Court for the Southern District of California, Southern Division, erred in finding or implying that if the oil strikes the chamber wall in any of defendant’s devices and therefore flows to any degree down thereon with pressure on the moving oil, even though part of the oil is reduced to a spray which falls by gravity to the settled fluid below, that such action or mode of operation constitutes infringement in whole or in part on any of the claims of said letters patent No. 1,269,134. [467]

XXXI.

That the United States District Court for the Southern District of California, Southern Division,

erred in finding that defendant's trap will infringe upon any of the claims of said letters patent in suit with the nipple constructed, as he claims it should be, according to the drawings and specification.

XXXII.

That the United States District Court for the Southern District of California, Southern Division, erred in finding that defendant's patent infringes claims 3 and 4 of complainants' patent, and likewise in finding that defendant's Model No. 2 infringes claims 1 to 4, inclusive, of said complainants' patent.

XXXIII.

That the United States District Court for the Southern District of California, Southern Division, erred in failing and refusing to find and decree that said letters patent No. 1,269,134 and each of the claims charged in this suit to be infringed, were and are null and void in view of the prior art and by reason of anticipation by the prior art as shown by the evidence herein.

WHEREFORE the appellant prays that said decree be reversed and that said District Court for the Southern District of California, Southern Division, be ordered to enter a decree reversing the decision of the lower court in said cause and dismissing said cause for want of equity at plaintiffs' costs.

WESTALL & WALLACE,
By JOSEPH F. WESTALL,
Attorneys for Appellant. [468]

[Endorsed]: No. E-113—In Equity. In the District Court of the United States in and for the Southern District of California, Southern Division. Francis M. Townsend et al., Complainants, vs. David G. Lorraine, Defendant. Petition for Appeal and Assignment of Errors. Filed Oct. 16, 1922. Chas. N. Williams, Clerk. By Edmund L. Smith, Deputy Clerk. Westall and Wallace, Attorneys at Law, Suite 516 Trust & Savings Bldg., Los Angeles, Phone 65683, Attorneys for Defendant. [469]

In the District Court of the United States, Southern District of California, Southern Division.

E-113—IN EQUITY.

FRANCIS M. TOWNSEND, MILON J. TRUMBLE and ALFRED J. GUTZLER, Doing Business Under the Firm Name of TRUMBLE GAS TRAP COMPANY,
Plaintiff,

vs.

DAVID G. LORRAINE,

Defendant.

Order Allowing Appeal.

On motion of Joseph F. Westall, Esq., of the firm of Westall and Wallace, solicitors and of counsel for defendant, it is hereby ordered that an appeal to the United States Circuit Court of Appeals for the Ninth Circuit from the decree heretofore filed and entered herein be, and the same is hereby al-

lowed, and that a certified transcript of the record, testimony, exhibits, stipulations, and all proceedings be forthwith transmitted to said United States Circuit Court of Appeals for the Ninth Circuit. It is further ordered that the bond on appeal be fixed in the sum of \$250.00.

Dated this 16th day of October, 1922.

BLEDSON,

U. S. District Judge. [470]

[Endorsed]: No. E-113—Equity. In the District Court of the United States in and for the Southern District of California, Southern Division. Francis M. Townsend et al., Complainants, vs. David G. Lorraine, Defendant. Order Allowing Appeal. Filed Oct. 16, 1922. Chas. N. Williams, Clerk. By Edmund L. Smith, Deputy Clerk. Westall and Wallace, Attorneys at Law, Suite 516 Trust & Savings Bldg., Los Angeles, Phone 65683, Attorneys for Defendant. [471]

In the District Court of the United States, Southern District of California, Southern Division.

E-113—IN EQUITY.

FRANCIS M. TOWNSEND, MILON J. TRUMBLE and ALFRED J. GUTZLER, Doing Business Under the Firm Name of TRUMBLE GAS TRAP COMPANY,

Plaintiff,

vs.

DAVID G. LORRAINE,

Defendant.

Bond on Appeal.

KNOW ALL MEN BY THESE PRESENTS: That we, David G. Lorraine, as principal, and Fidelity and Deposit Company of Maryland, a corporation of the State of Maryland, and duly licensed to transact business in the State of California, having complied with the laws of the State of California and with the Statutes of the United States, and particularly with the Act of August 13, 1894, as amended by the Act of March 23, 1910, of the United States and with the rules of the above-entitled court, as surety, are jointly and severally held and firmly bound unto Francis M. Townsend, Milon J. Trumble and Alfred J. Gutzler, and to them jointly and severally, in the penal sum of Two Hundred and Fifty (\$250.00) Dollars, to be paid to them and their respective executors, administrators, and assigns; to which payment, well and truly to be made, we bind ourselves and each of us, jointly and severally, and each of our heirs, executors, and administrators, by these presents.

Sealed with our seals and dated this 18th day of October, 1922. [472]

WHEREAS, the above-named David G. Lorraine has taken an appeal to the United States Circuit Court of Appeals for the Ninth Circuit to reverse the interlocutory decree made, rendered, and entered on the 29th day of September, 1922, in the District Court of the United States for the Southern District of California, Southern Division, in the above-entitled cause, granting a certain injunction

against said defendant, as in said interlocutory decree set forth;

AND, WHEREAS, said District Court of the United States for the Southern District of California, Southern Division, has fixed the amount of defendant's bond on said appeal in the sum of Two Hundred and Fifty (\$250.00) Dollars;

NOW, THEREFORE, the condition of this obligation is such that if the above-named defendant shall prosecute his said appeal, and any appeal allowed to be taken to the Supreme Court of the United States to effect, and answer all costs which may be adjudged against him, if he fails to make good said appeal, then this obligation shall be void; otherwise to remain in full force and effect.

DAVID G. LORRAINE,

Principal.

FIDELITY AND DEPOSIT COMPANY OF
MARYLAND,

[Seal]

By W. M. WALKER,

Attorney-in-Fact.

R. W. STEWART,

Agent.

The premium for this bond is \$10/00 per annum.
[473]

State of California,

County of Los Angeles,—ss.

On this 18th day of October, in the year one thousand nine hundred and twenty-two, before me, C. M. Evarts, a notary public in and for said County and State, residing therein, duly commissioned and sworn, personally appeared W. M. Walker, known

to me to be the duly authorized attorney-in-fact of the Fidelity and Deposit Company of Maryland, and the said W. M. Walker, acknowledged to me that he subscribed the name of the Fidelity and Deposit Company of Maryland thereto as surety and his own name as attorney-in-fact.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my official seal the day and year in this certificate first above written.

[Seal]

C. M. EVARTS,

Notary Public in and for the County of Los Angeles, State of California.

Examined and recommended for approval, as provided in Rule 29.

WESTALL and WALLACE,

By JOSEPH F. WESTALL,

Solicitors and of Counsel for Defendant.

I hereby approve the foregoing bond this 18th day of October, 1922.

BLEDSON,

United States District Judge. [474]

[Endorsed]: No-113—Equity. In the District Court of the United States, in and for the Southern District of California, Southern Division. Townsend et al., Complainant, David G. Lorraine, Defendant. Bond on Appeal. Filed Oct. 18, 1922. Chas. N. Williams, Clerk. By R. S. Zimmerman, Deputy Clerk. Westall and Wallace, Attorneys at Law, Suite 516 Trust & Savings Bldg., Los Angeles, Phone 65683, Attorneys for Defendant. [475]

In the District Court of the United States, Southern District of California, Southern Division.

IN EQUITY—E-113.

FRANCIS M. TOWNSEND, MILON J. TRUMBLE and ALFRED J. GUTZLER, Doing Business Under the Firm Name of TRUMBLE GAS TRAP COMPANY,
Plaintiff,

vs.

DAVID G. LORRAINE,
Defendant.

Stipulation Re Transcript of Record on Appeal and Exhibits.

The above-named defendant having taken an appeal in this suit, to the United States Circuit Court of Appeals for the Ninth Circuit, from the interlocutory decree entered on the 29th day of September, 1922;

IT IS HEREBY STIPULATED AND AGREED SUBJECT TO THE APPROVAL OF THE COURT:

Both parties to this suit so desiring, the provisions of Equity Rules 75, and 76, except the second paragraph of Equity Rule 76, promulgated by the United States Supreme Court, applicable to appeals, are hereby waived; and that the testimony and proceedings in court on the trial of this cause be included in the Transcript of Record on Appeal by producing therein a true and correct copy of

pages 1—544 of the Reporter's Transcript herein, as the properly prepared statement of the said proceedings and evidence on behalf of both parties under the provisions of Equity Rule 75, which the parties request be approved as such by the Court. [476]

SUBJECT TO THE APPROVAL OF THE COURT, IT IS FURTHER STIPULATED:

That such transcript on appeal shall further include a true and correct copy of the following papers, documents, orders, and proceedings entered and on file in the above-entitled cause:

- (1) Bill of complaint, filed January 3, 1921;
- (2) Answer, filed January 28, 1921;
- (3) Notice and motion to amend answer filed March 4, 1922;
- (4) Order entered March 13, 1922, continuing motion to amend answer to March 20, 1922;
- (5) Order entered March 20, 1922, continuing motion to amend answer to March 27, 1922;
- (6) Order of March 22, 1922, proceedings on final hearing and continuing to March 23, 1922, and allowing filing of supplemental bill and answer;
- (7) Order of March 23, 1922, proceedings on further hearing;
- (8) Supplemental bill of complaint, filed March 23, 1922;
- (9) Order entered March 24, 1922, proceedings in further hearing;
- (10) Order entered March 27, 1922, proceedings in further hearing;

- (11) Order entered March 28, 1922, proceedings in further hearing;
- (12) Answer to supplemental bill, filed March 28, 1922;
- (13) Transcript of proceedings and testimony on trial of this cause, as set forth in the attached stipulated transcript of such proceedings;
- (14) Opinion of Court filed September 11, 1922;
- (15) Interlocutory decree filed and entered September 29, 1922;
- (16) Petition for appeal filed October 16, 1922;
- (17) Assignment of errors filed October 16, 1922;
- (18) Order allowing appeal entered October 16, 1922;
- (19) Bond on appeal with endorsements, filed October 18, 1922;
- (20) Citation with endorsements, filed October 20, 1922;
- (21) This stipulation; [477]
- (22) A certificate under seal stating the cost of the record and by whom paid;
- (23) The names and addresses of parties to this appeal and their attorneys, Westall and Wallace (Joseph F. Westall and Ernest L. Wallace), 902 Trust and Savings Building, Los Angeles, California, solicitors and of counsel for Defendant-Appellant, David G. Lorraine, Los Angeles, California, and Frederick S. Lyon, Leonard S. Lyon, Stock Exchange Building, and Frank L. A. Graham, Higgins Building, Los Angeles, Cali-

fornia, solicitors and of counsel for plaintiff-appellees, Francis M. Townsend, Milon J. Trumble, and Alfred J. Gutzler, doing business under the firm name of Trumble Gas Trap Company, Los Angeles, California;

All of the above shall constitute, together with the book of exhibits hereinafter mentioned, the transcript of record of said cause on appeal, upon which record said appeal shall be heard and determined (except in so far as the immediately foregoing language may be qualified by the second paragraph of Equity Rule 76), which transcript, except said book of exhibits, shall be certified by the Clerk of this Court to the United States Circuit Court of Appeals for the Ninth Circuit.

IT IS FURTHER STIPULATED AND AGREED SUBJECT TO THE APPROVAL OF THE COURT:

That all exhibits filed by either party herewith shall be forthwith transmitted by the Clerk of this Court at the expense of defendant, to the Clerk of the United States Circuit Court of Appeals for the Ninth Circuit at San Francisco for use on said appeal, and that there shall be printed at the expense of defendant and under the supervision of the Clerk of the United States Circuit Court of Appeals for the Ninth Circuit, in a Book of Exhibits which shall form a part of the printed transcript of the record on appeal for use in said United States Circuit Court of Appeals for the Ninth Cir-

cuit on said appeal, copies of the following papers or documentary exhibits: [478]

Plaintiffs' Exhibit 1, Patent 1,269,134 to Milon J. Trumble, dated June 11, 1918.

Plaintiffs' Exhibit 2, File-wrapper and contents Trumble Patent in suit.

Plaintiffs' Exhibit 3, Copy of Patent 1,373,664.

Plaintiffs' Exhibit 4, Copy re-issued Patent No. 15,220.

Plaintiffs' Exhibit 6, Blue-print table of pressures, etc.

Plaintiffs' Exhibit 7, Paine's sketch of Stark Trap.

Plaintiffs' Exhibit 8¹, 8², 8³, 8⁴, Photographs.

Plaintiffs' Exhibit 9¹, 9², Sketches by Harris.

Plaintiffs' Exhibit 11, Drawing of Lorraine Trap.

Plaintiffs' Exhibit 12, Drawing produced by defendant.

Plaintiffs' Exhibit 13, Account sales of Lorraine Gas & Oil Automatic Separator.

Plaintiffs' Exhibit 14, Letter—Dec. 10, 1920, Townsend to Lacy Mfg. Co.

Plaintiffs' Exhibit 15, Letter—Dec. 13, 1920, Lacy Mfg. Co. to Townsend.

Plaintiffs' Exhibit 16, Blue-print drawing produced by Lorraine.

Plaintiffs' Exhibit 17, Sketch Drawing produced by Lorraine.

Plaintiffs' Exhibit 18, Three prints from drawings of Lorraine Separator.

Plaintiffs' Exhibit 20, Cut of Lorraine Trap, p. 46. Oil Weekly, Feb. 25, 1922.

Plaintiffs' Exhibit 21, Photo of Trap.

Plaintiffs' Exhibit 24, Harris sketch.

Plaintiffs' Exhibit 25, Enlargement of Drawing of Trumble Patent.

Plaintiffs' Exhibit 26, Enlargement of drawing of Trumble Patent. [479]

Defendant's Exhibit "B," Pencil Sketch.

Defendant's Exhibit "D," Photo of Lorraine Trap.

Defendant's Exhibit "E," Certified copy of patent 1,055,549 to George L. McIntosh.

Defendant's Exhibit "F," Certified copy of patent 426,880 to Walter Anderson Taylor.

Defendant's Exhibit "G," Certified copy of patent 927,476 to Arthur W. Barker.

Defendant's Exhibit "H," Certified copy of patent 1,014,943 to Eustace Vivian Bray.

Defendant's Exhibit "I," Certified copy of patent 815,407 to Augustus Steiger Cooper.

Defendant's Exhibit "J," Certified copy of patent 856,088 to Albert T. Newman.

Defendant's Exhibit "K," Pencil sketch of a trap.

Defendant's Exhibit "L," Pencil sketch of a trap.

Defendant's Exhibit "M," Pencil sketch of a trap.

Defendant's Exhibit "N," Letter—Townsend to Lacy Mfg. Co.

Defendant's Exhibit "O," Letter—Lacy Mfg. Co. to Townsend.

Defendant's Exhibit "P," Letter—Dr. W. P. Keene to Lacy Mfg. Co.

Said Book of exhibits shall be printed and copies thereof furnished counsel pursuant to the rules of said Circuit Court of Appeals for the Ninth Circuit

and three complete printed copies of the transcript and book of exhibits shall be served and furnished to solicitors and counsel for plaintiffs and defendant respectively.

Dated this 20th day of October, 1922.

FREDERICK S. LYON,
LEONARD S. LYON,
F. L. A. GRAHAM,

Solicitors and of Counsel for Plaintiffs-Appellees.

WESTALL and WALLACE,
By JOSEPH F. WESTALL,

Solicitors and of Counsel for Defendant-Appellant.

It is so ordered this 20 day of October, 1922.

BLEDSON,

U. S. District Judge. [480]

[Endorsed]: No. E-113—Equity. In the District Court of the United States in and for the Southern District of California, Southern Division. Francis M. Townsend et al., Complainants-Appellees, vs. David G. Lorraine, Defendant-Appellant. Stipulation and Order as to Transcript of Record on Appeal and Exhibits. Filed Oct. 20, 1922. Chas. N. Williams, Clerk. By Edmund L. Smith, Deputy Clerk. Westall and Wallace, Attorneys at Law, Suite 516 Trust & Savings Bldg., Los Angeles, Phone 65683, Attorneys for Defendant-Appellant. [481]

In the District Court of the United States, Southern District of California, Southern Division.

IN EQUITY—E-113.

FRANCIS M. TOWNSEND, MILON J. TRUMBLE and ALFRED J. GUTZLER, Doing Business Under the Firm Name of TRUMBLE GAS TRAP COMPANY,

Plaintiffs-Appellees,

vs.

DAVID G. LORRAINE,

Defendant-Appellant.

Praeceptum for Transcript of Record on Appeal, and Exhibits.

To the Clerk of the Court:

Sir: Please prepare certified transcript of record on appeal in the above-entitled cause on appeal, and forward to the Clerk of the United States Circuit Court of Appeals for the Ninth Circuit all the exhibits filed by either party in said cause, at San Francisco, California, all pursuant to stipulation as to transcript of record on appeal and exhibits signed by solicitors and counsel for the parties to said cause on the 20th day of October, 1922, and ordered by United States District Judge Bledsoe of this Court, and filed in this cause in your office. Please furnish solicitors for defendant-appellant with an estimate of your charges and fees in con-

nection with the above matters, and indicate the amount of deposit required by you in the premises.

Respectfully,

WESTALL and WALLACE,

By JOSEPH F. WESTALL,

Solicitors and of Counsel for Defendant-Appellant.

Dated: Los Angeles, California, October 20, 1922.

[482]

[Endorsed]: No. E-113—Equity. In the District Court of the United States in and for the Southern District of California, Southern Division. Francis M. Townsend et al., Complainants, vs. David G. Lorraine, Defendant. Praecipe for Transcript of Record on Appeal, and Exhibits. Filed Oct. 20, 1922. Chas N. Williams, Clerk. By L. J. Cordes, Deputy Clerk. Westall and Wallace, Attorneys at Law, Suite 516 Trust & Savings Bldg., Los Angeles, Phone 65683, Attorneys for Defendant-Appellant.

[483]

In the District Court of the United States, Southern District of California, Southern Division.

FRANCIS M. TOWNSEND, MILON J. TRUMBLE and ALFRED J. GUTZLER, Doing Business Under the Firm Name of TRUMBLE GAS TRAP COMPANY,

Plaintiff,

vs.

DAVID G. LORRAINE,

Defendant.

Certificate of Clerk U. S. District Court to Transcript of Record.

I, Chas. N. Williams, Clerk of the United States District Court for the Southern District of California, do hereby certify the foregoing volume containing 483 pages, numbered from 1 to 483, inclusive, to be the Transcript of Record on Appeal in the above-entitled cause, as printed by the Appellant and presented to me for comparison and certification, and that the same has been compared and corrected by me and contains a full, true and correct copy of the bill of complaint, answer, notice and motion to amend answer, and minute orders of March 13th, 1922, March 20th, 1922, March 22d, 1922, March 23d, 1922, supplemental bill of complaint, and minute orders of March 24th, 1922, March 27th, 1922, March 28th, 1922, answer to supplemental bill, transcript of proceedings and testimony, opinion of Court, interlocutory decree, petition for appeal, assignment of errors, order allowing appeal, bond on appeal, stipulation as to transcript of record on appeal and exhibits, praecipe and the original citation.

I DO FURTHER CERTIFY that the fees of the Clerk for comparing, correcting and certifying the foregoing record on writ of error amount to \$145.55, and that said amount has been paid me by the appellant herein. [484]

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed the seal of the District Court of the United States of America, in and for

the Southern District of California, Southern Division, this 15th day of November, in the year of our Lord one thousand nine hundred and twenty-two, and of our Independence the one hundred and forty-seventh.

[Seal]

CHAS. N. WILLIAMS,

Clerk of the District Court of the United States of America, in and for the Southern District of California.

By R. S. Zimmerman,

Deputy. [485]

[Endorsed]: No. 3945. United States Circuit Court of Appeals for the Ninth Circuit. David G. Lorraine, Appellant, vs. Francis M. Townsend, Milon J. Trumble and Alfred J. Gutzler, Doing Business Under the Firm Name of Trumble Gas Trap Company, Appellees. Transcript of Record. Upon Appeal from the United States District Court for the Southern District of California, Southern Division.

Filed November 29, 1922.

F. D. MONCKTON,

Clerk of the United States Circuit Court of Appeals for the Ninth Circuit.

By Paul P. O'Brien,

Deputy Clerk.

In the United States Circuit Court of Appeals for
the Ninth Circuit.

No —.

FRANCIS M. TOWNSEND, MILON J. TRUM-
BLE and ALFRED J. GUTZLER, Doing
Business Under the Firm Name of TRUM-
BLE GAS TRAP COMPANY,

Plaintiffs,

vs.

DAVID G. LORRAINE,

Defendant.

**Order Extending Time to and Including December
5, 1922, to File Record and Docket Cause.**

It appearing that the Clerk of the United States District Court for the Southern District of California is now preparing a transcript of the record for use in the above-entitled cause on appeal in accordance with stipulation and praecipe heretofore filed in said cause, but has not finished such transcript and will not be able to complete the same until after the return day of the citation herein,—

IT IS HEREBY ORDERED that defendant-appellant have to and including December 5th, 1922, within which to file the transcript on appeal and docket this cause on appeal in the United States Circuit Court of Appeals for the Ninth Circuit, and that the time of defendant-appellant to that end is hereby extended and enlarged.

Dated: Los Angeles, California, November 13, 1922.

BLEDSON,
United States District Judge.

[Endorsed]: No. 3945. United States Circuit Court of Appeals for the Ninth Circuit. Francis M. Townsend, Milon J. Trumble and Alfred J. Gutzler, Doing Business Under the Firm Name of Trumble Gas Trap Company, Plaintiffs-Appellees, vs. David G. Lorraine, Defendant-Appellant. Order Extending Time to and Including December 5, 1922, to File Record and Docket Cause. Filed Nov. 14, 1922. F. D. Monckton, Clerk. Refiled Nov. 29, 1922. F. D. Monckton, Clerk.